Truro Loops Project

Feasibility Study – Technical Report

Volume 01

Final Report

March 2018

Prepared by:
Cornwall Environmental Consultants (CEC Ltd)

For:
Truro River Working Group

Community Interest Company (TRWG CIC)

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Document Control

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Final Report	16.03.2018	Birgit Höntzsch CMLI Principal Landscape Architect	Phil Hills BA DipTP DipLA CMLI Director	Phil Hills BA DipTP DipLA CMLI Director
				

Disclosure

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This report is presented in five volumes as follows:

- **Volume 1 – Feasibility Study (main technical report) and Appendices**
- **Volume 2 – Surveys and Assessments**
- **Volume 3 – Data**
- **Volume 4 – Consultation Material and Results**
- **Volume 5 – Third Party Projects and Information**

Public access to volumes 3, 4 and 5 should be controlled due to data protection and copyright considerations in relation to data, consultee details and third-party information, for which CEC and the client do not own the copyright but were given permission to use the information for purposes of this study.

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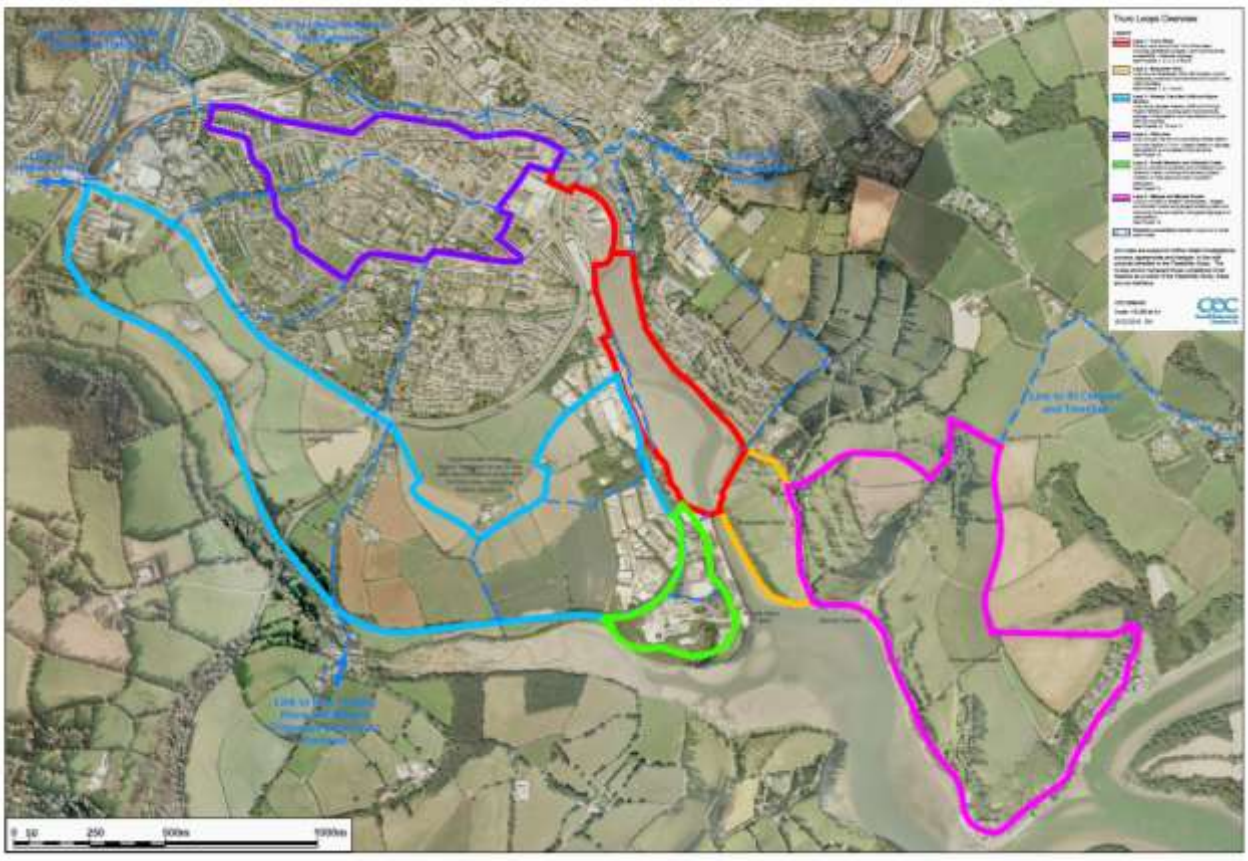
Executive Summary

CEC Ltd and their team of consultants were commissioned by Truro River Working Group (TRWG) in August 2017 to prepare a Feasibility Study for the Truro Loops Project.

The brief was to undertake a feasibility study into the viability and potential of the Truro Loops Project, exploring *"innovative, cost effective solutions to the challenges of the project, solutions that generate incremental benefits to the City of Truro, its residents, tourists, commercial/business operators and the local authorities. Solutions should lead to improving Truro's ambience, competitiveness, sense of well-being and pride as well as having positive social and economic outcomes"*. (Tender Brief January 2017, included in full in Appendix 10.2. detailing scope further)

The vision of the project is to facilitate sustainable car-free living and innovation in the city of Truro, through promotion of exciting and engaging projects developed from the framework set out in this feasibility study, ultimately achieving a better-connected Truro where people choose to live, work and visit as a prime destination in a future-orientated Cornwall. **The proposed routes are shown below (see Appendix 10.3.1 for full size copy of route plan).**



Key objectives of the Truro Loops vision for a more connected and sustainable Truro are:

- To reconnect the city with its water front and improve access for pedestrians and cyclists along the river.
- Connect the Boscawen / Malpas and Newham sides along the river with the proposal for two new pedestrian / cycle bridges and explore improvements along Malpas and Newham Roads to encourage pedestrian and cycle use.
- Create a network of well promoted, safer and well laid out walking and cycle routes in the city and its southern landscapes, linking to wider destinations such as Highertown / Coosebean cycle route, Idless Wood, Tresillian and the Mineral Tramways. In the future, the vision could be extended further to incorporate more of the northern and eastern parts of the city.
- Potential for new visitor facilities – this could range from a completely new building to renovating and extending existing buildings to having a dispersed solution of various visitor functions (such as interpretation, information, bike hire) across points in the city.
- Harnessing the wellbeing/health, educational and heritage benefits that could be delivered by the project.
- Creating new business opportunities and increasing the awareness of residents / visitors about existing businesses and their importance for Truro.

The study was informed by **stakeholder and public consultation**, the results of which are summarised in section 0, and detailed consultation data and copies of material included in Volume 4. Consultation results have informed the outcome of the study.

The study was informed by **extensive desk study and data review, as well as site surveys**. The results of the desk study and field work are summarised in section 0 of this report, and data are included as appropriate in Volume 3. A number of reports were prepared in addition to information already available. These reports are included in Volume 2, and consist of:

- Landscape and Condition Survey
- Preliminary Ecology Survey
- Non-Motorised Users Transport Review
- Flood Risk Assessment
- Visitor Centre Options Appraisal

As a result of the desk study, field work and consultation, **key opportunities and constraints** were identified as documented in section 0. They are summarised along with gaps of information / further survey needs in Table 7. The six loops are as follows:

Loop	Length	Elevation range (approximate)
Loop 1 – Truro River	2.16 kilometre / 1.34 miles (excluding city link)	0 to 7m AOD
Loop 2 – Boscawen Park	1.27 kilometre / 0.78 miles	0 to 7m AOD
Loop 3 – West Cornwall Railway Track Bed	6.03 kilometre / 3.75 miles	0 to 73.5m AOD
Loop 4 - City	3.23 kilometre / 2.01 miles	0 to 44.5m AOD
Loop 5 – South Newham and Calenick Creek	1.57 kilometre / 0.97 miles	0 to 29m AOD
Loop 6 – Malpas and Moresk Forest	4.37 kilometre / 2.71 miles	0 to 76m AOD

Options were reviewed for a number of project components as documented in section 6, including:

- **The loops (section 6.1)** – these evolved from an initial scoping version to the version represented in this report, with modifications undertaken to address stakeholder and public feedback as well as results from desk study and field work. There are a total of six loops, which would greatly increase the opportunities for cycling and walking in Truro. Various options for Malpas Road were reviewed to determine the most appropriate approach to improvements between Trafalgar roundabout and Malpas. Options for reconnecting the city to the river were also reviewed.
- **The bridges (section 6.2)** – the scheme includes two pedestrian bridges, one at Lighterage Quay and one at Garras Wharf. The requirement is for an opening bridge due to the need to maintain navigation along the river for a range of vessels. Various opening mechanisms, designs and locations were explored, informed by stakeholder input including from the Harbour Authority and Environment Agency, as well as feedback from public consultation. The preferred opening mechanism option is a bascule lifting bridge.
- **Visitor facilities (section 6.3)** – Existing facilities and locations were reviewed and potential needs of facilities for Truro Loops and potential locations evaluated.

This resulted in definition of a range of desirables, and definition of two preferred locations for new facilities including bike hire, information and ticket sales. These would be at the edge of the Garras Wharf car park near the under pass and in Boscawen Park in cooperation with proposals for upgraded facilities pursued by Boscawen Park.

The **preferred bridge type is illustrated below** for the Lighterage Quay Bridge. Further details and drawings along with a risk register for the bridges are included in Appendix 10.3.4 and 10.3.5.

Following on from the options appraisal, **14no sub-projects were identified** that in their entirety would be able to deliver the Truro Loops Project (see section 7 (Project Descriptions and Indicative Programme) and Appendices 10.3.2 (Project Briefs) and 10.3.3 (Concept Plans). Suggested priorities were assigned to assist the steering group in defining an approach to delivery. The projects are shown in the table below; including their suggested priority and the outline cost estimate for each (an outline cost estimate is included in Appendix 10.3.6). The total overall Truro Loops Project cost has been estimated at approx. £20M, if implemented as defined in this study. The total suggested implementation period has been set at 8 years.

Project Number and Title	Suggested Priority	Headline Cost Estimate
Project 1 – An Identity for Truro Loops - Interpretation, Signage, Art and Education Strategy	1	£79,000
Project 2 - Bridges and associated Access - Surveys, Consents, Design, Tendering and Implementation	1	£6,169,000
Project 3 - Temporary Park & Float and Junction with Lighterage Quay and Loop 3 (Loops 1, 3 and 5)	2	£688,000
Project 4 - Garras Wharf Access and Link to City including Visitor Facilities (Loop 1)	1	£2,568,000
Project 5 – Malpas Road Pedestrian / Cycle Improvements (Loop 1) – Malpas House to Sunny Corner	3	£2,995,000
Project 6 – Newham Road Review of Cormac Study (Loop 1)	3	£3,489,000
Project 7 – Boscawen Park Visitor Facilities (Loops 1 and 2)	1	£30,000
Project 8 – Boscawen Park River Embankment Improvements and Slipway Dredging (Loop 2)	2	£1,298,000
Project 9 – Old Railway Track Bed Improvements and Link to southern Routes	2	£317,000
Project 10 – A390 Cycle Route and Crossing at Arch Hill Roundabout	3	£436,000
Project 11 – Interface between Loop 3 and Higher Newham Development, Link to Newham	2	£247,000
Project 12 – A new Destination for Newham - Masterplan for Lighterage Quay and Loop 5	3	£330,000
Project 13 – Experiencing Truro - Creating the City Loop 4	3	£75,000
Project 14 – Malpas and Moresk Forest – Creating Loop 6	2	£575,000

Section 8 deals with viability and benefits of the scheme.

Section 9 suggests a possible steering group setup, and considers governance and funding issues.

The report is accompanied by appendices, and Volumes 2 to 5 with further information (Volume 2 – Surveys, Volume 3 – Data, Volume 4 – Consultation Material and Results, Volume 5 – Third Party Projects).

1. Introduction

CEC Ltd and their team of consultants were commissioned by Truro River Working Group (TRWG) in August 2017 to prepare a Feasibility Study for the Truro Loops Project.

Implementing the Truro Loops Project would deliver a range of environmental, social and economic benefits. Enhancing living, working and leisure opportunities and conditions in Truro would be a direct contribution to sustainable development in line with the National Planning Policy Framework and Cornwall Council Local Plan vision to *"achieve a leading position in sustainable living"*.

The Truro Loops Project can be become a reality through implementation of several sub-projects to improve connectivity for cyclists and pedestrians in and around Truro, create exciting new spaces and connections including two bridges and a footpath / cycleway loop around the Truro River area, the re-establishment of the link between the city and its river and numerous opportunities for environmental enhancements, interpretation, education and promotion of Truro's heritage. The project will create connections with other local projects, parks and businesses, making full use of the river as a waterway and special environment, and linking to the city's distinct surrounding environments.

1.1. The Brief

The key purpose of this work is to undertake a feasibility study into the viability and potential of the Truro Loops Project, exploring *"innovative, cost effective solutions to the challenges of the project, solutions that generate incremental benefits to the City of Truro, its residents, tourists, commercial/business operators and the local authorities. Solutions should lead to improving Truro's ambience, competitiveness, sense of well-being and pride as well as having positive social and economic outcomes"*. (Tender Brief January 2017, included in full in Appendix 10.2. detailing scope further)

1.2. Project Team

The feasibility study project team comprised the following companies:

- CEC Ltd (overall lead and coordination of study, stakeholder and public consultation, ecology and landscape studies, compilation of feasibility study)
- Hydrock Engineers (transport, infrastructure design and flood risk input)
- Hewson Engineering (bridge feasibility and concepts)
- PBWC Architects (visitor centre feasibility and conceptual scenes)
- WWA Surveyors (quantity surveying services for budget estimates)

2. Project Summary

This section sets out in more detail how the project evolved, summarises the vision and objectives, and provides an overview of the current project status.

2.1. Project History

This feasibility study is an initial stepping stone in formalising and pushing towards implementation of a visioning and ideas process that was started in 2013 by local residents and businesses, resulting in the formation of the Truro River Working Group (TRWG). LEADER LAG (Local Action Group) funding was obtained in summer 2017 enabling this study to go forward. A Community Interest Company was formed to administer this funding.

An initial diagram developed by TRWG illustrated the proposed loops as shown below. The diagram showed a total of six loops, which are considered and defined further in this feasibility study.

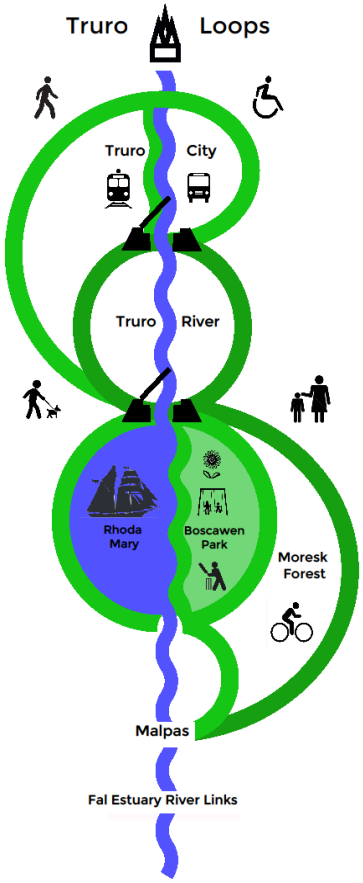


Figure 1: Original Truro Loops diagram issued with the Tender Brief for the Feasibility Study

(Diagram by Truro River Working Group)

The bridges formed an essential part of the concept from the start, and early concepts produced by Truro-based MeiLoci Landscape Architects showed contemporary steel and timber bridge illustrations to promote the idea of the loops and bridges. The early illustrative images from MeiLoci are shown below for information, these have been superseded by the findings and outputs of this feasibility study.

Figure 2: Early illustrative image of Lighterage Quay Bridge (Image by MeiLoci)

Figure 3: Early illustrative image of Garras Wharf Bridge (Image by MeiLoci)

2.2. Vision and Objectives

The vision of the project is to **facilitate sustainable car-free living and innovation in the city of Truro, through promotion of exciting and engaging projects developed from the framework set out in this feasibility study, ultimately achieving a better-connected Truro where people choose to live, work and visit as a prime destination in a future-orientated Cornwall.**

Key objectives of the vision for a more connected and sustainable Truro are:

- To reconnect the city with its water front and improve access for pedestrians and cyclists along the river.
- Connect the Boscawen / Malpas and Newham sides along the river with the proposal for two new pedestrian / cycle bridges and explore improvements along Malpas and Newham Roads to encourage pedestrian and cycle use.
- Create a network of well promoted, safer and well laid out walking and cycle routes in the city and its southern landscapes, linking to wider destinations such as Highertown / Coosebean cycle route, Idless Wood, Tresillian and the Mineral Tramways. In the future, the vision could be extended further to incorporate more of the northern and eastern parts of the city.
- Potential for new visitor facilities – this could range from a completely new building to renovating and extending existing buildings to having a dispersed solution of various visitor functions (such as interpretation, information, bike hire) across points in the city.
- Harnessing the wellbeing/health, educational and heritage benefits that could be delivered by the project.
- Creating new business opportunities and increasing the awareness of residents / visitors about existing businesses and their importance for Truro.

Achieving the vision and objectives will require an overarching approach between key players in the city, creating synergies between various projects and funding streams and coordinating aspirations and requirements of different user groups.

2.3. Project Overview

The project at this stage consists of the following key components - an overview of the loops and project area is on the following page, with a separate pdf file included in Appendix 10.3.1:

- **Loops 1 to 6**, each containing its own key projects as detailed further in this study and named as follows:
  - **Loop 1 – Truro River** (this is the primary loop subject to a more detailed analysis, including road and footway improvements on the Newham and Malpas Road sides of the river and connectivity to city centre)
  - **Loop 2 – Boscawen Park** (level of detail of review sufficient to define workable solution, but secondary to loop 1)
  - **Loop 3 – West Cornwall Railway Track Bed, A390 and Higher Newham** (level of detail of review sufficient to define workable solution, but secondary to loop 1)
  - **Loop 4 – City** (high-level review only to define key constraints and further work needed)
  - **Loop 5 – South Newham and Calenick Creek** (high-level review only to define key constraints and further work needed)
  - **Loop 6 – Moresk Forest and Malpas** (high-level review only to define key constraints and further work needed)
- **Two bridges** (Lighterage Quay Bridge at Newham Flood Gates and Garras Wharf Bridge south of Town Quay)
- **Visitor facilities** (exploring locations, nature of and need for facilities and providing outline guidance on space requirements)
- **River environment** and its constraints for access and boardwalks, and including high level review of **dredging** and associated constraints and options, and considerations of river edge condition and erosion control
- **Interpretation, education and signage opportunities**

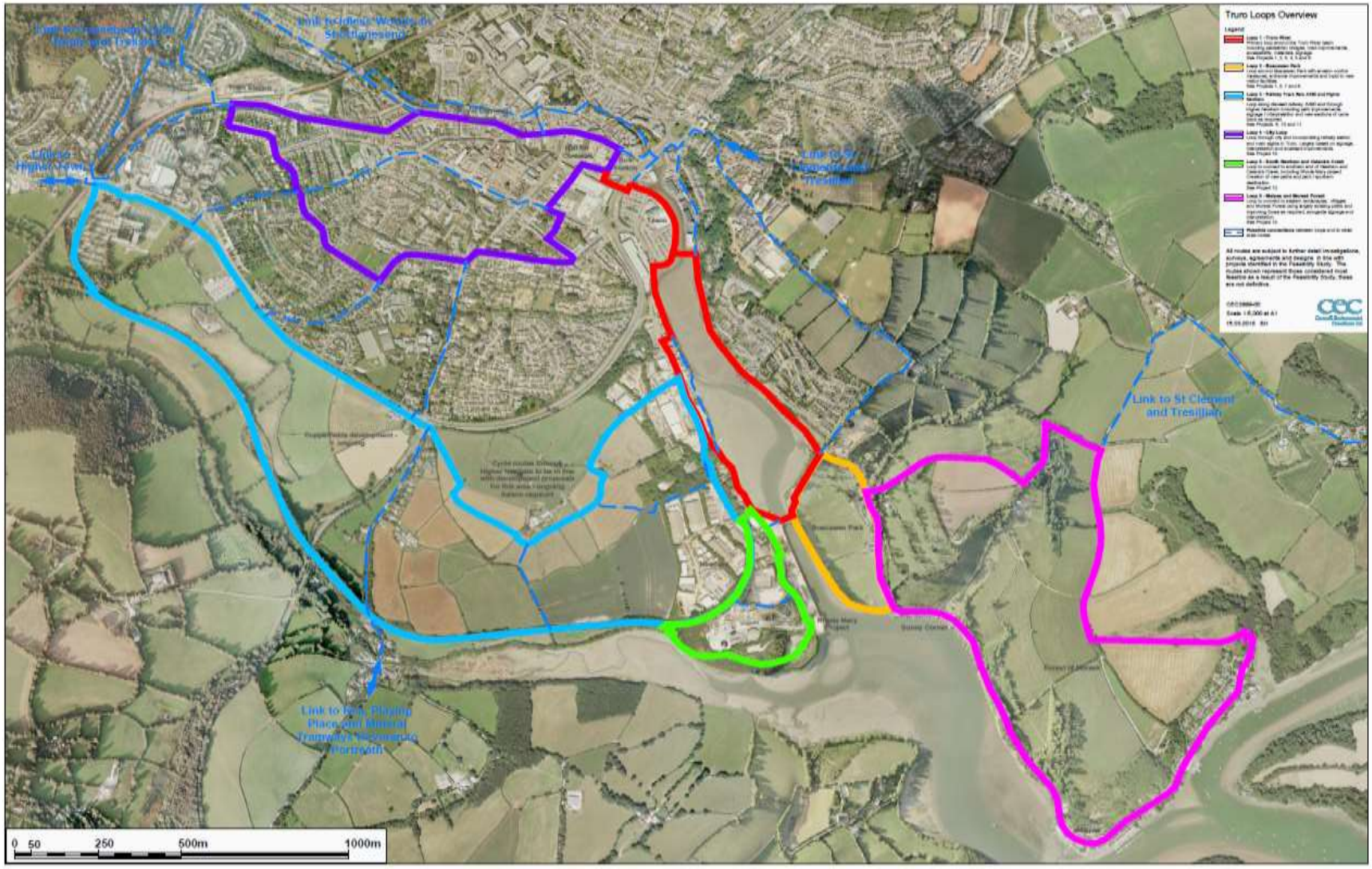


Figure 4: Truro Loops Overview

(Full size pdf file included in Appendix 10.3.1)

3. Consultation Summary

The feasibility study was informed by consultation with key stakeholders as well as the public. A summary of results is presented below. Consultation data are included in full in Volume 4, including an overview with personal data removed.

3.1. Consultation Overview

The consultation was undertaken as follows:

- An initial questionnaire and route scope diagram were sent to key stakeholders accompanied by a project summary, to make them aware and obtain any initial feedback as well as asking for information they may hold that may be of relevance to this project. This was undertaken during October 2017.
- Public consultation event held in central Truro on 29 November 2017, with the option to complete a detailed questionnaire on the day and records taken of attendance.
- Online survey replicating the questionnaire used during public consultation to enable people to view the display panels used for the public consultation and submit their feedback if they could not attend or needed more time. This survey was open until January 2018 for feedback submissions.
- Separate meetings were organised with key stakeholders if considered appropriate and important to the project outcome. See below for further information.

In addition, the Truro Loops twitter feed (@TruroLoops) was used to promote awareness of the project, as well as CEC Ltd issuing a blog post on their website inviting people to comment. TRWG members also informed their contacts and further parties of the scheme, making them aware of the public consultation and feedback options.

At this point in time TRWG do not have a website, although this is planned. Once in place, the website will be a valuable tool to invite people to submit further feedback and get involved as the scheme progresses.

3.2. Stakeholder Consultation

Table 1 shows an overview of the stakeholders consulted as part of this study and summarises their key points made to date. It is acknowledged that there are likely to be further stakeholders that may have an interest in the project, and the list should be built upon and tailored to specific areas once individual projects are taken forward, and if further

stakeholders express an interest to be involved.

Schools were at this stage not consulted due to the technical and high-level nature of the study, but they were informed through TRWG members of the public consultation and invited to attend. It is recommended that going forward schools should be involved in more detail in some of the projects that have particular educational value and / or offer opportunities for design input by pupils.

All stakeholders that responded to the consultation invite were supportive or cautiously supportive (depending on future project details and whether their concerns could be addressed satisfactorily).

3.2.1. Key Stakeholders

The following are considered key stakeholders for the Truro Loops project, due to either their operational or regulatory involvement with parts of the project, or their potential to become important future partners for this scheme to go forward (in alphabetical order):

- Cornwall Council (various teams including public access, highways, planning, environment)
- Environment Agency
- Living Villages / Higher Newham Developers
- Local businesses along the routes that are outside the BID areas
- Local community groups – including Friends of Boscawen Park, Truro Canoe Club, Truro Cycle Club, Truro Cycle Campaign
- Local landowners on land that may form part of the loops but is not owned by Cornwall Council – further detailed landownership searches for projects required
- Local residents – including along Malpas Road and in Malpas
- Moresk Forest Project
- Natural England
- Newham BID and Newham businesses
- Port of Truro / Harbour Authority
- Rhoda Mary Project
- South West Water
- Sustrans
- Tesco
- Truro BID and Truro businesses
- Truro Boat Owners Association
- Truro City Council (various – parks team, community officers)

It is recommended that these key stakeholders are invited to have a representative on a Steering Group for the overall Truro Loops project (see section 9 for considerations of governance), or if they are unable to join a Steering Group due to resources, name a representative that will be kept informed by the Steering Group about the status of the project, requesting specific input if and when required, and attending Steering Group meetings if deemed appropriate.

3.3. Public Consultation and Online Survey

A total of 48 completed feedback forms has been received and analysed. Only two were not in support of the scheme, and three had reservations / not fully in support. All others were in support and feedback received verbally on the public consultation day was also largely positive. Key points arising are summarised in Table 2, along with a brief statement about how these comments have been taken on board in the process of the study.

Further comments were received during the public consultation event, in particular from local resident James Sargent, who lives in the apartments at Malpas House, near the northern bridge location. There are concerns from him and other residents in the block about the potential for a tall structure affecting their views. He has asked that this concern about residential views is taken on board when considering detailed designs and has kindly provided photographs of the view from his balcony as shown below. These views should be considered further if the Garras Wharf Bridge project is taken forward. It is envisaged that a detailed planning application for bridges would include photo montages.

Figure 5: View from Apartments south, where bridge would be in foreground

Table 1: Stakeholder Consultation Summary

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
Cornwall AONB	Yes	Yes		Yes	Questionnaire response received: • Within the Cornwall AONB Management Plan 2016-2021 one of the key priorities for collaboration is to work with partners to develop a project to provide health and recreation activities such as walks and events, exploring the potential to work with the NHS to identify people who would benefit from these activities - potential partners identified to support such a project are Cornwall Council (CC) Environment, CC Historic, CC Public Health, CC Strategic Environment, Cornwall Wildlife Trust, European Centre for Environment and Human Health, NHS Kernow and Cornwall Sports Partnership. • The visual aspects of the proposed foot bridges - ensure the bridges merge into the surrounding landscape and are not obtrusive. • Ensure the walking and cycling routes that do encroach on/or are within the AONB boundary are designed in such a way as to merge discreetly into the surrounding landscape.
Cornwall Blind Association				Yes	No response received

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
Cornwall Council County Ecologist	Yes			Yes	Questionnaire response received: • SAC and SSSI will be a key consideration for any bridge proposals. • Would welcome encouraging sensitive public access to the natural environment around Truro, great education opportunities. • Ecological surveys will be needed to identify any adverse impacts and how to mitigate them, and to identify enhancement that can be delivered. • Note lighting of the route through currently unlit areas would not be welcomed and is unlikely to be appropriate in the less urban areas. • Clearance of the old railway line, if required, as these are often key quiet green corridors for wildlife.
Cornwall Council Environmental Growth Officer				Yes	Meeting held to inform Tim Dart about proposals and see whether there may be potential to link into Environmental Growth proposals. See meeting notes in Volume 4, Appendix V4-04. S106 moneys may be a potential source of funding, as well as EA funds for some aspects of scheme.
Cornwall Council Environment Team	Yes			Yes	No response received

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
Cornwall Council Local Community Network	Yes			Yes	No response received
Cornwall Council Public Access Officer	Yes			Yes	No response received
Cornwall Councillor for Truro Boscawen	Yes			Yes	No response received
Cornwall Neighbourhoods For Change				Yes	No response received
Cornwall Rural Community Council				Yes	No response received
Cornwall Wildlife Trust	Yes		Yes	Yes	Tom Shelley from CWT was informed about project and responded by email – main concerns related to potential effects on nature conservation sites including SAC / SSSI and CWS.
Ebo Adventures	Yes			Yes	No response received
Environment Agency	Yes	Yes	Yes	Yes	EA was involved in relation to flood gates and interface with bridge there. See site meeting notes in Volume 4, Appendix V4-04. EA also provided data and information in regard to Lighterage Quay and the flood gates; see Volume 3, Appendix V3-08. Bridge must be separate to EA assets, cannot be attached to or utilise part of flood gates.

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					Discuss erosion control proposals at Boscawen Park with EA. DCIS response included the following EA responses: • Who should we contact to discuss the operation and maintenance of the flood gates in more detail and to involve in discussion about bridge options in that area? - *A new bridge will require a Flood Risk Activity Permit from us. Please contact psocornwall@environment-agency.gov.uk.* • Do you hold any data on previous dredging of the area between the floodgates and the town? - *We understand that Truro Harbour Authority may have carried out dredging operations here in the past. They may therefore have further information that could help you with your enquiry. Malpas Estuary is a SSSI. Fal and Helford River is a SAC area (Special Area of Conservation). Please also consult with Natural England.* • What consents and considerations would be key to considering any future dredging? - *We understand that Truro Harbour Authority may have carried out dredging operations here in the past. Marine Management Organisation is the consenting Authority for any dredging. Natural England also needs to be*

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					consulted, as the Estuary is a SSSI. • Would you have to be consulted for any alterations, improvements or maintenance of the river edges? - *Any works below the Mean High Water Spring (MHWS) tide level is likely to require a Marine Licence from the MMO (Marine Management Organisation). If a Marine Licence is applied for and secured, we would not require a Flood Risk Activity permit to be applied for from us. A Flood Risk Activity Permit may however be required for works on the non-tidal watercourses or near any flood defences. We should be consulted for any such works.* • Do you hold any data on contamination in the river bed / mudflats / local area? - *We don't but Truro Harbour Authority may do.* • Do you hold any river bed / mudflat survey data (levels, bathymetry, water levels, flows etc.) that we may be able to use to inform the feasibility study? - *LIDAR data can give you information on topography etc. This can be found by using the following link http://www.geostore.com/environment-agency/. As the area is into tidal and therefore needs to be protected, it is a priority habitat for Natural England*

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					and they may also be able to help.
Fal River Enterprise	Yes			Yes	Ben Mark attended final draft presentation, and emailed as follows: *As I mentioned yesterday, I think the issue of whether or not a ferry landing point is viable and, if so, where it should go, is critical to the project. I would be very happy to provide some expertise from within my team to assist with this - we clearly have an interest in making the project work. If nothing else, we could advise on how often, with no additional dredging, we could land at the point you've currently indicated on the plans. It may well turn out to not be worth attempting, but at least we could make that call early on and therefore not waste time and effort further on down the road.*
Falmouth Wheelers	Yes			Yes	No response received
Friends of Boscawen Park	Yes	Yes		Yes	Questionnaire response received: Pathways to be quality shared surfacing - accessible to bikes, buggies and wheelchairs where possible. A bridge access at Tesco end is key to opening up the waterfront from Truro and providing safe access from Tesco to Malpas Road. Loops to provide access to existing public footpath networks and Sustains trails. Early plans showed two bridges on the loop, at Tesco and

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					Boscawen Park. Loop 1 is key to the success of the project and without bridges the project does not work. The visuals and communication of ideas is not very clear at this stage. To generate enthusiasm, interest and funding in the project these need to be inspiring and creative. The routes need to be wide with quality surfaced paths. All routes should maintain the same high quality / safety standards. Access to waterfront on Newham Road and Malpas Road. The existing pathways are narrow and difficult to navigate at some points and there are some places where pedestrians and cyclists are on-road with vehicles.
Living Villages / Higher Newham Development	Yes		Yes	Yes	Meeting held with Vicky Garner. See site meeting notes in Volume 4, Appendix V4-04. VG also provided draft scheme for Higher Newham for information; see Volume 5, Appendix V5-05. Site meeting also held with Kelly Caplin, Cornwall College, who will be managing the agricultural aspects of the scheme, and reviewed proposed additional footpath connection with her. Agreement in principle – please continue liaising during project development. Cost for additional connection must be covered by Truro Loops.
Malpas Road Community Association	Yes			Yes	No response received
Moresk Forest Project	Yes	Yes	Yes	Yes	2no site meetings held with Colin Parker, landowner. Site meeting notes for first meeting in Volume 4, Appendix V4-04. Current proposal plan for Moresk Forest in Volume 5,

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					Appendix V5-04. Second meeting was to review one short section of route in eastern corner, which had to be amended to avoid landownership issues. CP in agreement in principle and seeking to cooperate to generate funding for continuation of the Moresk Forest project alongside Truro Loops, ongoing management costs and more interpretation / planting etc.
Natural England	Yes			Yes	See email feedback in Volume 4, Appendix V4-05. Initial generic response received stating that detailed consultation will incur costs. Further response received from Rhiannon Pipkin with further contact details and stating that they would be interested to talk further. This needs to be taken forward as part of detailed project development for all projects relating to the river and its edges / all nature conservation areas.
Newham BID	Yes		Yes	Yes	See meeting notes in Volume 4, Appendix V4-04 and email feedback in Volume 4, Appendix V4-05. Generally supportive and welcoming ideas and findings, although there is some concern re use of Higher Newham Lane as follows: *With regard to Loop 3, Newham BID would not be able to advocate a defined footpath along Higher Newham Lane. Through discussions with businesses with regard to a recent planning application for housing on Higher Newham Lane, it has become apparent that there are huge safety concerns around creating either a concrete or pseudo pavement along this lane given the heavy articulated vehicles that use the*

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					lane. Newham BID has successfully objected to the residential planning application on various grounds but potential pedestrian and vehicle conflicts was one of the issues; that's not to say that the lane couldn't be used as a walkway but that we would not necessarily encourage it and if it did proceed, would prefer it not be defined as a walkway so that pedestrians were acutely aware that they had to take care as they were entering a road used by commercial vehicles
Police Crime Prevention Design Advisor				Yes	No response received
Port of Truro / Harbour Authority	Yes	Yes	Yes	Yes	Initial office meeting, site meeting and participated in bridge workshop. See meeting notes in Volume 4, Appendix V4-04. Maintaining navigation is of utmost importance, this means bridges must have an opening mechanism. Further discussion required in future to define operating mechanisms and responsibilities. Harbour Authority unlikely to have staff resource to be able to operate lifting bridges – needs to be automated and safe. Provision of some parameters for feasibility in relation to tide times and boat sizes. Will have to be closely involved in any dredging proposals / lead on them.
RSPB Cornwall	Yes			Yes	Questionnaire response received: • Tree/scrub planting or screens along exposed areas of the route to reduce disturbance to birds.

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					• Designed viewpoints/screens to aid viewing the birds form where they are not disturbed • Downloadable app with geo-locator to provide people with information whilst on the route including information on the important wildlife features and how people protect them. • Potential disturbance to the features of the SSSI (Black tailed godwits and other wintering water birds) needs to be investigated and mitigation measures applied where required. • RSPB has access to bird data, which should be reviewed for any detailed studies going forward.
South West Water				Yes	No response received
St Petroc's Society	Yes			Yes	No response received
Stonechester (Property and land company)	Yes		Yes	Yes	Provided some landownership maps. Meeting with Tim Rix arranged for 26 March 2018, any outcomes from that will be fed back as addendum to this study.
Sustrans	Yes			Yes	Questionnaire response received from Simon Murray: • Rather than a city centre inner loop based on the local road/ street network extend Loop 3 to include the Coosebean Greenway and Malabar, linked to the train station, and returning into the City Centre along St Georges Road. • Consider operating a Public Toilet scheme provided by local businesses, currently operating in Camborne

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					for example. • Bicycle parking at main attractors/ destinations. • Avoid busy and highly trafficked A Roads. • Truro River bridge crossing is a key component. SM also provided cycling count data (see Volume 3, Appendix V3-09) and recommended looking at the Sustrans Bike Life Reports, available from https://www.sustrans.org.uk/bikelife. Nearest city is Bristol, with a 2017 report available. Loop 3 uses some of the existing Sustrans route further discussion required.
Tesco					TRWG (David Pollard) sent letter to Tesco informing them of the scheme. No response received to date.
The Rhoda Mary project	Yes			Yes	No response received
Trelander and St Clement's Community Association	Yes			Yes	No response received
Truro BID				Yes	No response received
Truro Boat Owners Association (TBOA)	Yes		Yes	Yes	Site meeting held; see meeting notes in Volume 4, Appendix V4-04. Key issues: • Potential user conflict of quay use by the public, separation needs to be considered.

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					• Potential security issues, if public access increases. • 100t crane required at least twice a year to lift boats in and out; bridge and access proposals must not interfere with this. • Navigation to be maintained. • In principle agreement to use of boat yard as Park & float in summer months, when only few boats are in yard (this is between April and October). Subject to detail agreement and proposals.
Truro Canoe Club	Yes			Yes	No response received
Truro City Council Community Development	Yes	Yes		Yes	Questionnaire completed with Damien Richards on the phone: • Fully supportive of scheme. • Linking up and loops are great proposals. • Concern about damage to trees / riverside if not done sensitively – any proposals need to be considerate of local environment and conditions • Malpas Road Community Group currently not very well organised, restructuring, so would be better to go to Malpas Village Community directly. Ensure they are involved. • Working on forming Truro Community Forum in the next few weeks – would be ideal platform to introduce this project to people.

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
Truro City Council Parks Team	Yes		Yes	Yes	Site meeting held; see meeting notes in Volume 4, Appendix V4-04. Key points: • Supportive of Loops and bridge. Bridge would be beneficial for use of their proposed extended café / restaurant facility. • Would be willing to consider integration of Loops visitor facilities with their proposals, timescales may be an issue. • Truro canoe club has planning consent for new boat shed. • No major reconfiguring of car park planned. • Erosion of banks is a big issue – has not been progressed, if Truro Loops can help to bring this idea forward again it would help. Last section at southern end done in 2000, with EA support. Would be good to extend that solution all the way (large granite boulders with backfill).
Truro Cycle Campaign	Yes			Yes	Truro Cycle Tube Map provided via Phil Allen, included for reference in Volume 5, Appendix V5-02. Ensure liaison with Truro Cycle Campaign on potential overlaps and synergies for detail project development. Useful to promote wider area links. Key projects on their website have some overlap with loops in relation to route 3 and improvements to it. They also have developed a Truro Cycling Charter, which is

Organisation	Dates				Key points to note from stakeholder feedback received – see completed forms and email records for full details and explore further once projects progress to detailing / implementation
	Initial information and question-naire sent	*Phone call*	*Meeting*	*Public consultation invite sent*	
					included in Volume 5, Appendix V5-
Truro Cycling Club	Yes			Yes	Anonymous questionnaire received back: • Key benefits health, cutting congestion, enhanced appreciation of the city, safety for children and non-drivers. • Consider connection to Coosebean route. • Consult with Truro Cycling Campaign (https://www.trurocyclingcampaign.com/).
Truro Day	Yes			Yes	No response received
Truro Green Walks	Yes			Yes	Questionnaire response received: • Boscawen Park to Newham Link considered the greatest benefit. • Key issues likely to be landownership, costs, availability of S106 moneys, and ongoing maintenance once constructed. • The current signage of 'River Walk' from cathedral to Worth's Quay and beyond is in desperate need of renewing.
Truro River Rowing Club	Yes			Yes	No response received
Watkins Haulage	Yes			Yes	No response received
Westcountry Rivers Trust	Yes			Yes	No response received

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Table 2: Public Consultation Summary – Feedback Forms

Topic	Key points to note from feedback received – ideas were incorporated into or investigated if possible as part of this study and aspects raised below are discussed in this report.
Support for scheme	Yes – 43, No – 2, Potentially, subject to modifications – 3 (Total 48 responses received). Those that disagreed could not see the benefits of the scheme, had issues with the cost vs benefit and thought it was only to satisfy a small number of people. Those that had reservations were concerned about visual impacts on Malpas House, or wanted to see creation of a permanent water park.
Benefits	Safe access, connectivity, opening up the river, improving walking and cycling routes, health benefits, more green space and leisure opportunities, and promoting history and the environment were all mentioned as aspects that people would support most, with the bridges being particularly popular.
Issues	Cost, funding and wheelchair / disability access were mentioned most as concerns.
Most important loops	Loop 1 and 2 were mentioned most as those perceived as most important, with Loop 3 also getting a higher number of mentions.
Least important loops	Loops 4, 5 and 6 were considered least important (although also did get some mentions under the most important question).
Loop 1	First class access and high quality routes which are safe, segregated and continuous. . It should be safe enough for 8 - 80 year olds as TfL and DfT standards now recommend and is common in Holland. Existing provision discriminates - feels too unsafe for children, women and older people. Visitor facilities less important compared to better access. Access for less able / wheelchair users. Dredging and easier ferry access, some mention of permanent water and a marina / a lock rather than flood gates. Art features / street art to encourage visitors – pool of creativity in Cornwall. Bridges a good idea. Abandoned boats are an issue. Rowing and water use.

Topic	Key points to note from feedback received – ideas were incorporated into or investigated if possible as part of this study and aspects raised below are discussed in this report.
Loop 2	Access for less able / wheelchair users. Wildlife and habitats / reed beds. Road access and all day parking issues / more parking. Cycle hire facility. Multi-use / better offer / more activities / visitor facilities good idea. Loop for children to learn cycling on. Improve pavements from Truro to the Park. Pretty good as is.
Loop 3	Very muddy in winter in places, needs better surface to encourage wider user range. Railway heritage / interpretation great idea for this loop. Better signage. Links to wider area (south towards Devoran and west towards Coosebean) and Higher Newham link. Habitat / biodiversity / wildlife aspects of this route. Fly-tipping to be addressed. Cycle hire.
Loop 4	Important history and heritage – great potential. Involve schools. Make Truro city centre traffic free. Better signage. Interactive street furniture a good idea. Involve local businesses.
Loop 5	Good to open up this southern part, but must be done without impacting on functionality of harbour. Some concerns about steepness / ease of access / sewage works.

Topic	Key points to note from feedback received – ideas were incorporated into or investigated if possible as part of this study and aspects raised below are discussed in this report.
	Overall plan and strategy for the area required. Opportunity for nature reserve. Visitor centre / workshop – canoeing, heritage, best practice.
Loop 6	Steep areas, overall cycle access and wheelchair access queried. Good idea to link to Tresillian / St Clement. Speed of traffic to Malpas an issue – conflicting with a beautiful cycling experience. Potential conflicts between walkers and cyclists. Needs detailed liaison with Malpas village and the local businesses there. A plaque to Jenny Mopus, ref: Lynne, Arthur "About Truro" Signage and interpretation.
Improving link between city and river	Cantilevered path. A way of crossing Morlaix Avenue by foot to Newham without having to loop into Lemon Quay would be good for residents in the Park View/Barrack Lane area, and give immediate access to the riverside loop. Making more room for access, attractions and small businesses. Bridges. Improvements to underpasses. Encourage younger generation (Schools/community projects etc.) to learn about History of Truro River. Interactive app/Tour along Loops Discovery Trail. Signage and well-lit, safe routes. Interpretation. There are no real destinations along the riverside to encourage people to visit. There may be opportunities to locate businesses/facilities etc. closer to the river. Create a lock and a water park.
Visitor centre	Bike hire.

Topic	Key points to note from feedback received – ideas were incorporated into or investigated if possible as part of this study and aspects raised below are discussed in this report.
	Information points. Several people not in favour of separate visitor facility – they feel it is less important than the loops. Tickets. Boat hire. Cafe and toilets. Most mentions for preferred location – Boscawen Park and city centre (Lemon Quay / Bus Station area)
Bridges	Majority is in support. Great for connectivity. Designs presented not simple enough. Issue with northern bridge and views from Malpas House. Cost is a concern. Boat access / opening mechanisms. Bridge proposals ideal but to include a plastic bridge; this is an absolute must and will put Truro firmly at the forefront of bridge civil engineering technology. Why not organise a competition by contacting schools of architecture e.g. Plymouth or liaising with universities in Holland who for obvious reasons specialise in this type of bridge.
Other comments – these have been copied from the feedback forms to give a flavour of the range of opinions considered in this study.	• I have given my comments as a resident of the Malpas Road who walks that road a lot and have 3 friends in wheelchairs and see the struggle and danger they risk as they go to town to shop so that is why I feel so strongly. • I would like to see Cornish language included on signage and possibly on naming new bridges/buildings. • This survey is very biased and closed. There is so much that Truro needs before spending a small fortune of taxpayer's money on an airy fairy scheme. • Don't over provide for cyclists please! I would love to see a walkway opened up on the river between the back of Mannings to Victoria Square on the East side of the river. • Stop all day parking at Boscawen Park. • I think the project is incredibly exciting and opens up endless opportunities for things like peer support

Topic	Key points to note from feedback received – ideas were incorporated into or investigated if possible as part of this study and aspects raised below are discussed in this report.
	groups (walking, cycling, birdwatching, nature etc.) but also exercise and general health improvements. Encouraging positive effect on local environment. There are also great community engagement opportunities such as design of signage, development of education of educational resources (story boards/ interactive app/guides/maps etc.). If it does go ahead it should all be recorded and a book released and YouTube Channel documenting for younger audience. The generation of creative opportunities is also exciting as it gives opportunity for a "Street Art" Festival, performances linked with environment, sculpture etc. the list is endless. • Marvellous, but a little idealistic? Might the TL project founder purely on cost, with a perception that TL might compromise other essential public services. This said I'd love to see this happen. And as someone else said: if you don't at least try…. A bridge over Morlaix Avenue? An overriding theme seems to be the cutting off of the city from the river by the dual-carriageway. Could a foot/cycle bridge help mitigate? • The wrecked boats along Malpas Road need disposing. Permanent water would encourage canoeists and dinghy users. • Slow traffic down on Malpas Road by more priority islands. Improve footpath on Malpas Road for prams/ pedestrians/ disabled and runners. Do both of these as a priority while seeking overall funding for the whole project? We long for this to happen and urge Cornwall Council to allocate (& seek) funding. If it can be done for Bodmin (badly) why not Truro (well). • The scheme seems more likely to attract recreational cyclists than to persuade motorists to cycle to work. The overall aim of the project is a bit fuzzy. I think setting out exactly what you hope to achieve would be helpful in understanding the benefits. • Can we make Truro Car Free at least at weekends - in the city centre? Also a road going around Truro would be amazing. A road from Chivvy, around Truro and to St Austell would be so good. Wouldn't need to go through Truro then. Too many cars. So noisy for walkers. Too small for the volume of traffic. • Brilliant idea. • Just a brilliant piece of work.

Topic	Key points to note from feedback received – ideas were incorporated into or investigated if possible as part of this study and aspects raised below are discussed in this report.
	• The old Compton Castle boat needs removing, it is an eyesore and nothing ever works there. • I would like to be able to cycle and walk in Truro as a normal way of getting around for short everyday trips, and to build some exercise into my daily routine. I drive but would cycle more if these proposals were implemented. • I think the concept of loops would be better dropped in favour of a network. The concept of origin and destination is important for utility journeys and the idea of a network gives more flexibility in terms of distance, difficulty and variety for leisure trips. A good deal of thought needs to be put into the type of surfaces. What is ideal for cyclists is not necessarily ideal for walkers and horse riders. Any new links need to be public rights of way if at all possible to ensure their long term availability and maintenance. Improvements to Truro bridleway 3 and footpath 4 at Trennick would be very desirable as part of the project but we would not want to see blacktop surfaces on either of these paths. • Encourage the more passive pastimes like photography and birdwatching so the area beyond Trennick Mill remains an area of tranquillity. Contact Heads of departments at local then national then international places of learning so there is plenty of student involvement. Delegate to specialist groups as much as possible, including a young marketing whizz kid. Contact German and Dutch universities for European involvement. Regarding Malpas, eventually with the massive lottery funding that has been applied for (?) provide a small working heritage museum along the lines of Trenance in Newquay. Contact Dr. Jo Mattingley. This could celebrate the life of Jenny Mopus, the majority love a good back/heritage story and the deceased womenfolk of Truro are not celebrated enough. • By accessibility I am referring not just to mobility needs but the needs of these sensory impairments learning needs, families (pushchairs) etc. If this is to be a true community project, all users must be considered from the outset. Lighting and other safety factors are also important. • Good lighting/security measures would be important to ensure early morning & eve access. • It would be a shame if you introduce parking fees at the small car park in Newham Road where the Old railway line starts. Making sure park and ride is a cheap as possible. Interpretation boards there and at the railway would be useful. Build pride in our city. Inform and educate people on history, heritage, wildlife litter, dog mess. Get people out of their cars. • The bridge infrastructure could provide an excellent opportunity to integrate small scale tidal range

Topic	Key points to note from feedback received – ideas were incorporated into or investigated if possible as part of this study and aspects raised below are discussed in this report.
	generation, increasing scheme benefits whilst matching the existing ethos. I would love to talk to you more about this opportunity, and how it could be integrated with existing, ongoing, work in this field in Cornwall. • These developments could make Truro and its surrounding areas the envy of the country. Go for it and well done! • Be realistic. You cannot use the water facilities as indicated in the ridiculous images of a rowing eight in some proposals. Without permanent water most of the time we are looking at a large expanse of mud. • The project would be great for the attractiveness and health of the city. • Truro has the potential to be such a great place for outdoor leisure - walking, cycling, running, playing - but there are frustratingly few safe and easily accessible places unless you're in a car. I welcome any initiatives that open up the river and Truro to active leisure. • Well done to everyone involved - what a brilliant start • Tidy up the river and improve access. Retain water by barrage gates. Trippers go from Newham Port quay with bus and car parking. No need for double decker busses going to Malpas! • We think the whole concept is out of kilter with the difficult economic situation we find ourselves in. It is absolutely amazing that nowhere in the document it mentions the one aspect of today's living that is crucial to social, environmental and economic survival is people's good health and wellbeing. That we think is the prime justification of the project. But there are many more modest and far cheaper ways of achieving it.

4. Desk Study and Site Survey Results Summary

This study is underpinned by detailed desk study and site survey work, as well as the consultation feedback discussed previously. Full data and supplementary documents can be found in Volumes 2 to 5.

4.1. Planning Policy

Key planning policy relevant to the Truro Loops project is as follows (see references for web links to full documents):

- National Planning Policy Framework (NPPF) [i]
- Cornwall Local Plan (CLP) [ii]
- Truro and Kenwyn Neighbourhood Development Plan (TKNDP) [iii]

The most relevant policies and provisions are summarised below.

4.1.1. National Planning Policy Framework (NPPF)

The NPPF has a presumption in favour of sustainable development. It outlines the three dimensions to sustainable development – economic, social and environmental. It states that *"Pursuing sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people's quality of life, including (but not limited to):*

- *making it easier for jobs to be created in cities, towns and villages;*
- *moving from a net loss of bio-diversity to achieving net gains for nature;*
- *replacing poor design with better design;*
- *improving the conditions in which people live, work, travel and take leisure; and*
- *widening the choice of high quality homes."*

The NPPF identifies 12 core planning principles, the following of which are considered most relevant to the project as the promotion of connectivity, walking, cycling and improvements of the urban environment would be directly relevant to these:

- *"… take account of the different roles and character of different areas, promoting the vitality of our main urban areas, … recognising the intrinsic character and beauty of the countryside and supporting thriving rural communities within it;*
- *actively manage patterns of growth to make the fullest possible use of public*

transport, walking and cycling, and focus significant development in locations which are or can be made sustainable; and

- *take account of and support local strategies to improve health, social and cultural wellbeing for all, and deliver sufficient community and cultural facilities and services to meet local needs"*.

The key topics of relevance to the projects are considered to be:

- Ensuring the vitality of town centres
- Promoting sustainable transport
- Requiring good design
- Promoting healthy communities
- Conserving and enhancing the natural environment
- Conserving and enhancing the historic environment

The Truro Loops project has the capacity to contribute to enhancing Truro's city centre and its Newham and Malpas / Boscawen secondary nodes of economic and social activity and ensuring the long-term vitality of these areas. It will assist in promoting sustainable transport by encouraging cycling and walking, making it safer and easier and reducing reliance on cars. This will also help to promote healthier living, in combination with better access to the natural environment with improved educational offerings. Good design will be a key consideration for any building and improvement projects associated with the Truro Loops – such as visitor facilities, bridges and road improvements at Newham and Malpas Roads. The natural and historic environment will be considered in detail for the Truro Loops project overall as well as individual projects within, exploring options for improvements throughout and encouraging education and appreciation amongst the users.

4.1.2. Cornwall Local Plan

The Cornwall Local Plan takes as its basis the vision that was identified in Future Cornwall (the adopted sustainable community strategy), which is to ***"achieve a leading position in sustainable living"***. The Future Cornwall strategy goes on to underpin this bold strategy as follows:

"Cornwall has a fantastic opportunity right now to take a lead on the green agenda. A strong knowledge base and entrepreneurs, natural resources for renewable energies (sea, wind, sun, geothermal); a place with a world class brand, a high quality environment; access to appropriate housing and a culture of creativity, invention and innovation.

Sustainable living means changing our behaviour as a society for example, how or when we travel, how we use and produce energy and what we eat. It is the careful use of natural resources that support survival so that they are still there for future generations. We will also depend less on fuel and food supplies that we do not control. Producers and consumers must take responsibility to save natural resources, reduce waste, and reduce greenhouse gas emissions that affect our climate".

The Truro Loops project is ideally placed to make a substantial contribution to the vision of Cornwall being a leader in sustainability, by encouraging sustainable living and working in its main city and acting as catalyser for economic, social and environmental projects that can make a real difference to life in Truro in 2030 (the duration of the Local Plan and Future Cornwall strategy).

The CLP replicates the presumption in favour of sustainable development set out in the NPPF. It defines four core themes, all of which have some relevance to the Truro Loops project:

- **To support the economy** – Truro Loops will help to promote local businesses through greater awareness of and access by the community. New business opportunities may be created as a spin-off from projects associated with Truro Loops including for example for bike hire and catering, and as a result of construction and implementation works bringing money to the local economy.
- **To enable self-sufficient and resilient communities** – Truro Loops will facilitate new and better access to natural and urban resources, thereby enabling more people to live more sustainably, making the community overall more self-sufficient and resilient.
- **To promote good health and well-being for everyone** – Truro Loops will encourage people to get out and explore, to learn about and enjoy their environment. This will facilitate better health and wellbeing. If car use can be reduced as a result of Truro Loops, people and the environment will benefit.
- **To make the most of our environment** – Truro Loops will facilitate better access to natural and heritage resources and promote their responsible use, educating users about the landscapes, ecosystems and historic assets and stories of the local area.

The following are considered key policies which support Truro Loops and its projects within the overall planning policy framework:

- **Policy 5 – Business and Tourism**, paragraph 3 states: *"The development of new or upgrading of existing tourism facilities through the enhancement of existing or provision of new, high quality sustainable tourism facilities, attractions and accommodation will be supported where they would be of an appropriate scale to their location and to their accessibility by a range of transport modes. Proposals should provide a well balanced mix of economic, social and environmental benefits"*.
- **Policy 12 – Design**, particularly paragraphs 1a, 1c and 1e, dealing with character and distinctiveness, movement and engagement process, with proposals to be based on a comprehensive place-shaping approach. *"Creating a network of safe well connected routes which are easy to read and navigate …"* is stated to be a fundamental design principle that proposals will be judged against.
- **Policy 16 – Health and Wellbeing** is applicable to Truro Loops in all aspects (pollution, contamination, air quality management, maximising opportunities for physical activities, cycle storage, local food growing, flexible community open spaces), and significant benefits could be generated by Truro Loops and its projects in support of the policy. Part of Truro Loops is in the Truro Air Quality Management Area.
- **Policy 23 – Natural Environment**. This policy is about protecting and enhancing Cornwall's natural environment and sustaining its local character and distinctiveness. With the environment being at the heart of several loops, and Truro River being an internationally protected area, this policy will be a key consideration for some of the projects associated with Truro Loops.
- **Policy 24 – Historic Environment**. This policy would be relevant where proposals may affect heritage assets for example along routes or for specific projects associated with Truro Loops. It is also about *"protecting the historic maritime environment, including significant ports, harbours and quays"*, which would include Truro Harbour.
- **Policy 25 – Green Infrastructure**. This is considered a key policy for Truro Loops, and linking Truro Loops to Green Infrastructure as well as health and wellbeing will greatly assist in accessing relevant funding streams as well as justifying projects within the overall scheme. Also note the reference to clear arrangements for long-term maintenance and management in the policy. The policy states: *"The existing green infrastructure network in Cornwall, which is*

important to recreation, leisure, community use, townscape and landscape quality and visual amenity will be protected and enhanced. Development proposals should contribute to an enhanced connected and functional network of habitat, open spaces and waterscapes by:

1. Retaining and enhancing the most important environmental infrastructure assets and connections that contribute to the functionality of networks of ecosystems and our Strategic Environmental Infrastructure Network in their existing location; and

2. Demonstrating that all the functional environmental infrastructure and connections have been taken into account in the design of the scheme or site layout, including impacts on ecosystem services; biodiversity; coastal processes and recreation within and near to the application site and show how this understanding has positively contributed to place making and influenced the proposal; and

3. Providing appropriate buffers to natural spaces that have community, biodiversity and heritage significance; and

4. Restoring or enhancing connectivity for nature and people through the site and linking to adjacent sites or green routes, helping to provide better links between urban and rural landscapes and coastal areas, creating accessible and attractive places for communities to make regular contact with the natural environment; and

5. Providing accessible and good quality open space and where applicable improved access to coastal space; and

6. Providing clear arrangements for the long-term maintenance and management and/or enhancement of the green infrastructure assets. …".

- **Policy 26 – Flood risk management and coastal change** is considered relevant in relation to Loop 1 and the bridges, where proposals should be designed with rising water levels and maintenance of flood defence assets and water edges in mind (development should be sited and designed in a manner that does not create avoidable future liability for maintenance for public bodies and communities). These proposals will have to show that they comply with this policy, as well as any larger surfacing proposals (including consideration of SUDS and improvements to drainage where existing problems may exist).

- **Policy 27 – Transport and Accessibility.** This policy is geared towards major developments and their contributions to a resilient and reliable transport system and has therefore no direct effect on Truro Loops. However, Truro Loops may be able to access some of the major development contributions for elements of the scheme that are close to them.

4.1.3. Truro and Kenwyn Neighbourhood Development Plan (TKNDP)

The vision and objectives of the TKNPD are stated as follows:

"Our vision is for Truro & Kenwyn to be a successful and vibrant place, where everyone has the opportunity to thrive economically, culturally and socially; a safe place, aware of its history and confident of its future; that promotes and achieves learning, innovation, activity, health and sustainable development. Truro & Kenwyn will be a diverse community that provides for and values all of its people, ensuring that developments benefit communities".

"What the Plan aims to deliver:

- *Truro & Kenwyn to be vibrant, safe and pleasant places with adequate opportunities for work, fulfilment and enjoyment;*
- *Conserving and enhancing the landscape and green spaces of our area;*
- *A good mix of facilities, services and open spaces for local people;*
- *To encourage community cohesion;*
- *To try and make sure that people of all ages and backgrounds can find fulfilment, happiness and safety in their communities;*
- *The variety and quality of life in our communities to be good, not just for us, but for those who travel to work here and for those who visit us;*
- *Our settlements to blend carefully and accessibly into our rural surroundings;*
- *To play a full and dynamic part in tomorrow's Cornwall — fostering the spirit of "onen hag oll" — one and all;*
- *Most of all, to engage young people in our community so that it attracts them to make their lives here".*

The Truro Loops project ties into these well and could make a substantial contribution to working towards this vision. Particular contributions could be made to the Green

Infrastructure, Open Space, Community and Transport aspects of the plan, which are discussed below.

Policy E5 – Green Infrastructure. This policy seeks an increase in biodiversity, new open space provisions with food growing opportunities, connecting existing and new footpaths, preserving and enhancing key areas of biodiversity and green space, and establishing positive and viable management mechanisms.

Policy E7 – Character of the Highways and byways. This policy covers roads, streets, opes, lanes, bridges and pavements, and aims at retaining and enhancing the character of material and construction. Where possible environmental improvements should be made and historic paving and construction materials restored. The character of the Conservation Area should be preserved.

Policy EJ1 – Communities at Work. New employment developments would be expected to assist in improving the employment environment, and a key point of relevance to the Truro Loops is the requirement for *"provision for the on- and off-site highways, pedestrian and other access improvements which are needed to integrate the development well into the surrounding area and sustainable / active transport networks"*.

Policy EJ3 – The Port of Truro. This policy covers the area associated with Lighterage Quay and is therefore a key policy for any proposals and development in that area, including the Truro Loops bridge and Park & Float project. The policy states:

"In the port area shown on the proposals map, permission will be granted for the development of the port and marine related industry or uses where the proposal would address the requirements of EJ1 and:

- *Contribute to an improved layout and provision of additional facilities for the port;*
- *Contribute to the development of the maritime sector in Truro;*
- *Be compatible with adjoining uses;*
- *Preserve or enhance green infrastructure links found within the area.*
- *Contribute to the realisation of the key nature conservation objectives for the Fal and Helford Special Area of Conservation and the Malpas estuary SSSI.*

Development which would cause a significant adverse effect on the Fal and Helford Special Area of Conservation will not be permitted.

Individual proposals within the Newham area will be expected to contribute to the overall appearance and feel of the area, however the main opportunity for making connections

between the City Centre and Newham is through the redevelopment of Garras Wharf. If this happens within the Plan period, Cornwall Council will expect this issue to be addressed by any application".

Policy EJ4 – Newham Employment Area. This policy should be considered in relation to improvements and footpath / cycle links included in the Truro Loops project that cross the Newham employment area. The policy may open up opportunities to support the implementation of Truro Loops if coordinated with forthcoming projects at the outset. The policy states:

"Permission will be granted for the redevelopment of the Newham employment area for B1 (offices) and high quality employment space where the proposal would contribute to meeting the requirements of EJ1 and:

- *Contribute through improved layout, design of building, density of use and landscaping to the site and its surroundings;*
- *Address the principles of the Newham Improvement Plan;*
- *Maintain or increase the employment density of the site;*
- *Be compatible with adjoining uses;*
- *Help strengthen links to Truro centre and contribute to the realisation of road improvements at 'Little Newham';*
- *Preserve or enhance green infrastructure links such as the Newham trail, hedgerow and trees found within the area.*
- *Not lead to the sterilisation of the waterfront for marine related industry in the future.*

Small scale extensions to the employment area will be permitted where the proposal would:

- *Represent a natural rounding off of the existing area;*
- *Be of a scale, design and layout that would not adversely impact on the landscape setting of the estate;*
- *Not sterilise the Heritage Quarry as shown on the proposals map;*
- *Improve the layout, functioning and appearance of the Newham employment area.*
- *Contribute to the realisation of the key nature conservation objectives of the Fal and Helford Special Area of Conservation and the Malpas Estuary SSSI.*

Development which would cause a significant adverse effect on the Fal and Helford Special Area of conservation will not be permitted".

Policies LC2 and LC3 relating to open spaces and their protection are relevant to Truro Loops as several open spaces form part of or are alongside the proposed loops. Projects associated with Truro Loops should have due regard to these policies and aim to support them through improvements to these open spaces.

Policy LC4 deals with cultural and community centres, services and facilities and should be considered when developing visitor centre proposals further.

The Transport section of the TKNDP refers to the Truro Sustainable Transport Strategy and the need to reduce travel. The Truro Sustainable Transport Strategy could not be found on the Cornwall Council website, but the Connecting Cornwall Transport Strategy 2030 is available (with reference to but not focussed on Truro). See more details on walking and cycling provisions within it below.

Policy T1 – Transport Strategy Contributions makes reference to the use of Community Infrastructure Levy S106 contributions to fund some of the Truro Sustainable Transport Strategy.

Policy T3 – Sustainable Transport largely deals with how developments should facilitate sustainable transport, but also references links to cycle and walking routes. It references the Truro Green Infrastructure Strategy and linking with strategic and important routes, but this document could not be located.

4.1.4. Connecting Cornwall 2030 – Transport Strategy

This is a comprehensive suite of documents providing a Cornwall-wide overview of baseline and strategy for sustainable transport [iv]. Truro Loops could link into this to achieve delivery of some aspects of the scheme.

The current implementation plan 2015-2019 lists the following cycling and walking schemes (see Figure 6, reproduced from Implementation Plan), with a total planned investment of approx. £6M. There may be potential to explore inclusion of some of the Truro Loops projects into future implementation rounds associated with Connecting Cornwall 2030, where these link with the overall objectives of the strategy.

Table 1 **Walking and Cycling Schemes**

	Total funding					Connecting Cornwall: 2030 Funding Programme Implementation Plan (IP2)				
	15/16	16/17	17/18	18/19	**Total Cost**	15/16	16/17	17/18	18/19	**IP2 Total**
Quintrell Downs Footpath extension and crossing	£0	£80,000	£0	£0	**£80,000**	£0	£50,000	£0	£0	**£50,000**
Bodmin Camel Trail extension Growth Deal 1	£3,238,000	£1,197,000	£0	£0	**£4,435,000**	£600,000	£0	£0	£0	**£600,000**
Walking and Cycling network (phase 1) – Truro Growth Deal 1	£848,192	£703,808	£0	£0	**£1,552,000**	£489,252	£252,748	£0	£0	**£742,000**
Newport Bridge (Ridgegrove)	£0	£0	£0	£500,000	**£500,000**	£0	£0	£0	£500,000	**£500,000**
Carkeel Village to Tamar View	£100,000	£0	£0	£0	**£100,000**	£100,000	£0	£0	£0	**£100,000**
A3047 Camborne Link to Roskear (Phase 2)	£0	£0	£185,000	£0	**£185,000**	£0	£0	£185,000	£0	**£185,000**
Truro Station & Frances Street	£185,000	£0	£0	£0	**£185,000**	£0	£0	£0	£0	**£0**
Chacewater School, footway provision	£10,000	£0	£0	£0	**£10,000**	£10,000	£0	£0	£0	**£10,000**
Cardrew Industrial Estate, Redruth	£0	£0	£446,000	£0	**£446,000**	£0	£0	£446,000	£0	**£446,000**
A3047 – Cardrew Way to Mount Ambrose	£0	£0	£156,000	£0	**£156,000**	£0	£0	£156,000	£0	**£156,000**
Penzance TWCN	£0	£0	£2,000,000	£0	**£2,000,000**	£0	£0	£200,000	£0	**£200,000**
Larcombe Road, St Austell	£0	£0	£130,000	£0	**£130,000**	£0	£0	£130,000	£0	**£130,000**
	Total funding					Connecting Cornwall: 2030 Funding Programme Implementation Plan (IP2)				
	15/16	16/17	17/18	18/19	**Total Cost**	15/16	16/17	17/18	18/19	**IP2 Total**
Saltash cycle network	£0	£0	£1,500,000	£0	**£1,500,000**	£0	£0	£1,000,000	£0	**£1,000,000**
A3047 – Cardrew Way to Treleigh Arms, Redruth	£0	£0	£158,000	£0	**£158,000**	£0	£0	£158,000	£0	**£158,000**
Mounts Bay to Marazion cycle path	£0	£0	£250,000	£0	**£250,000**	£0	£0	£250,000	£0	**£250,000**
TWCN, Bodmin	£0	£0	£500,000	£600,000	**£1,100,000**	£0	£0	£0	£500,000	**£500,000**
Barncoose Terrace, Redruth	£0	£0	£0	£328,000	**£328,000**	£0	£0	£0	£328,000	**£328,000**
Glenthorne, Threemilestone	£0	£60,000	£0	£0	**£60,000**	£0	£ 50,000	£0	£0	**£50,000**
Goldsithney to Marazion B3302	£0	£0	£375,000	£0	**£375,000**	£0	£0	£375,000	£0	**£375,000**
Total Walking & Cycling schemes	**£4,381,192**	**£2,040,808**	**£5,987,000**	**£1,428,000**	**£13,837,000**	**£1,199,252**	**£352,748**	**£3,187,000**	**£1,328,000**	**£6,067,000**

Figure 6: Extract from Connecting Cornwall 2030 Implementation Plan 2015-2019 showing currently proposed cycling and walking schemes in Cornwall

4.2. Landownership

Detailed inquiries for landownership have not been undertaken as part of this study, due to the large spatial extent. Information on Cornwall Council landownership in the Truro Loops area was provided via TRWG in pdf format, shown in Figure 7 below, with a larger version included in Volume 3. Some further localised landownership details were provided by local landowner Stonechester.

It is likely that costs for full landownership search in key project areas will be incurred, which should be allowed for as part of future project development. Key areas where cooperation with other landowners is required are the bridge locations and adjacent areas, Malpas Road and Newham Road.

It is recommended that full searches and discussions with landowners should be undertaken at the earliest opportunity. Those will have to be undertaken via formal requests to the Land Registry, and should be focussed on individual project areas.

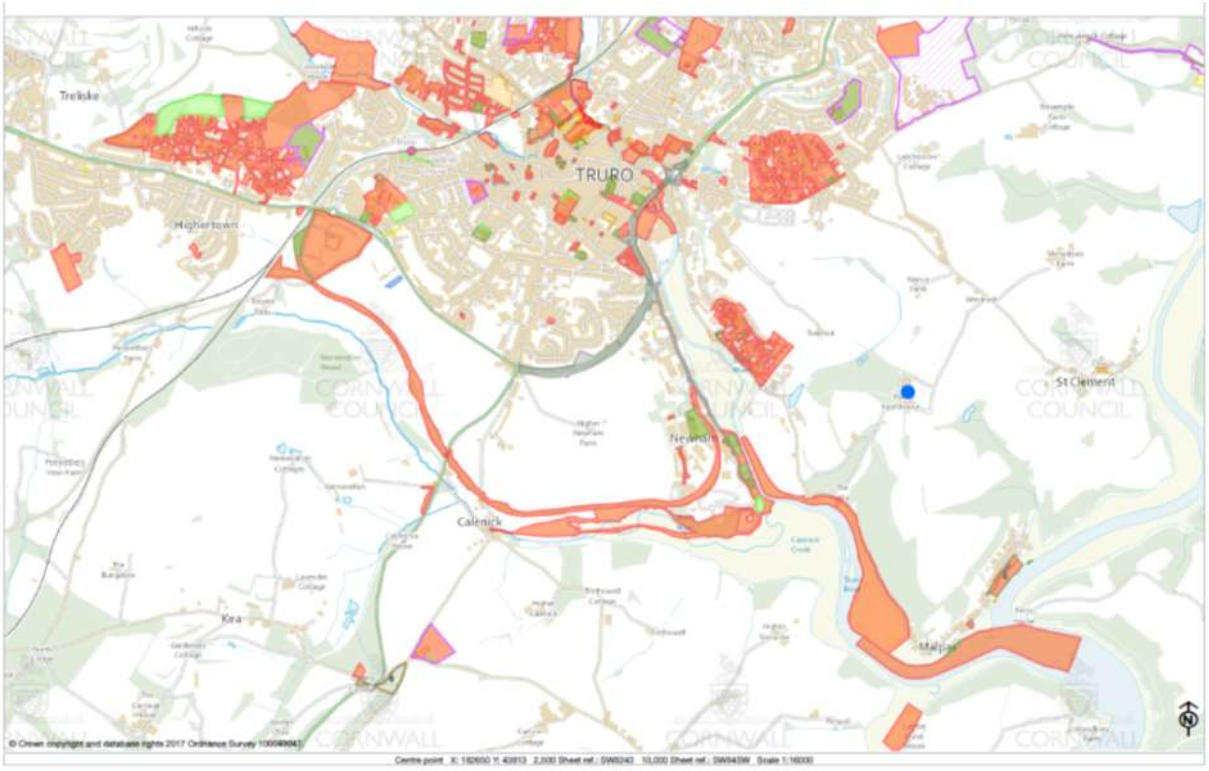

Figure 7: Overview of Cornwall Council landownership within Truro Loops project area

4.3. Existing User Groups

There is a wide range of existing user groups in the Truro Loops area, key user groups include:

- Local residents
- Local employers and employees
- Cyclists
- Walkers / joggers
- Dog walkers
- Water users – boat owners, boat users, canoe users
- Car users
- Shoppers / visitors / tourists

Within the user groups above, there are a number of vulnerable and less able users, including older people, people with reduced mobility and children. Provisions for these groups within Truro are not extensive, and some of the routes included in Truro Loops do not currently encourage use of them by the more vulnerable and less able. Projects going forward as a result of the Truro Loops Feasibility Study must ensure that the needs of those users are fully considered. It is recommended that a Steering Group for projects going forward should work with a disability advisor who would coordinate requirements and liaise with user groups as required about accessibility and suitability for less able users.

4.4. Population and Social Issues

This section provides a brief overview of population data and social issues that have been identified during survey work. Key sources for data were:

- http://www.ukcensusdata.com/cornwall-e06000052#sthash.YuBosnOA.dpbs (then select individual Truro wards)
- https://www.visitcornwall.com/industry/research
- Site survey work

4.4.1. Cornwall

The Economy and Culture Strategy[v] summary states:

"Cornwall's population has continued to grow and now stands at 532,300 people. This growth continues to be largely driven by in-migration – which is dominated by people of middle to older working age. An emerging trend is in relation to young people with a steady increase in the number of young people aged 15 to 24 years moving into the area from 2001 to 2011. Also, a decrease in the number of young people aged 15-19 years leaving

Cornwall over the same period. Of note is that the number of people graduating in Cornwall has increased almost fourfold in the last ten years (2,944 people in 2012 compared to 798 in 2002). This would indicate that investment in higher education has had an impact upon migration patterns. This is increasing the number of economically active people in the medium term, but is a trend that will impact upon the future number of older (generally economic inactive) people. Cornwall has an ageing population, in line with the national trends, but more marked in terms of percentages of the total population. Cornwall already has a larger percentage of its population aged 65 years and older".

4.4.2. Truro Residents

The 2011 census shows a total number of 18,766 residents for Truro. Based on the publicly available census data (www.ukcensusdata.com), the following diagrams have been created to provide some more detail about the population in Truro:

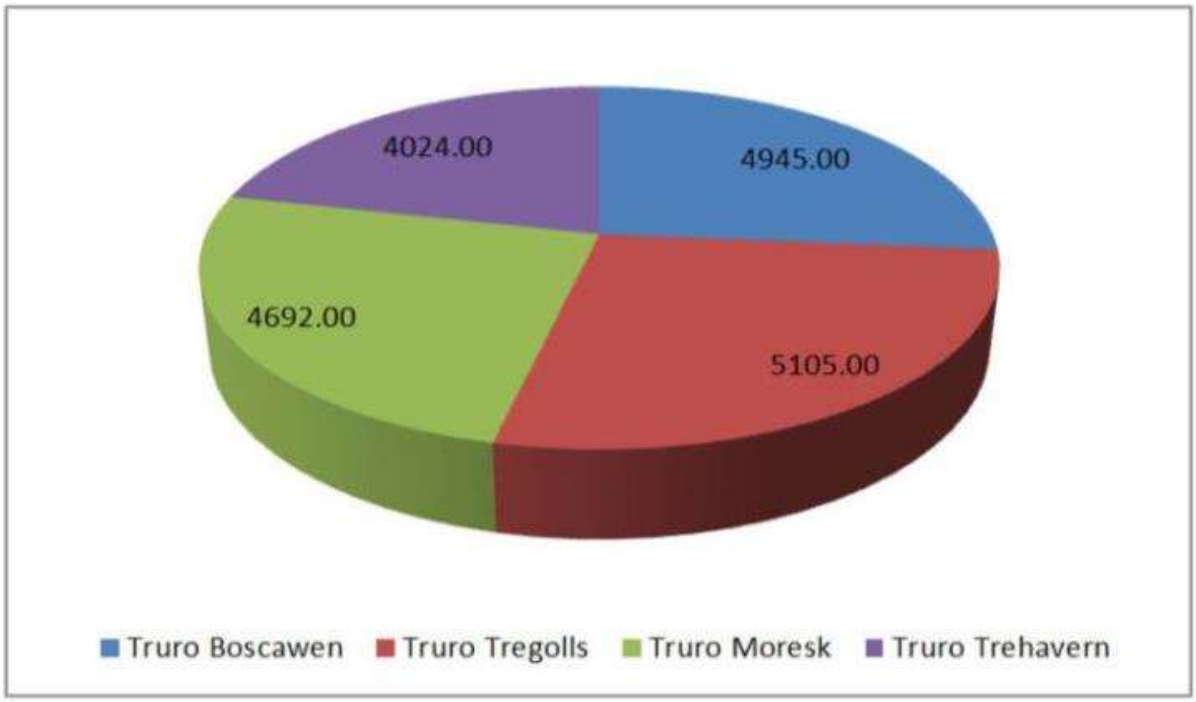

Figure 8: Population by ward (total Truro population in 2011 was 18,766)

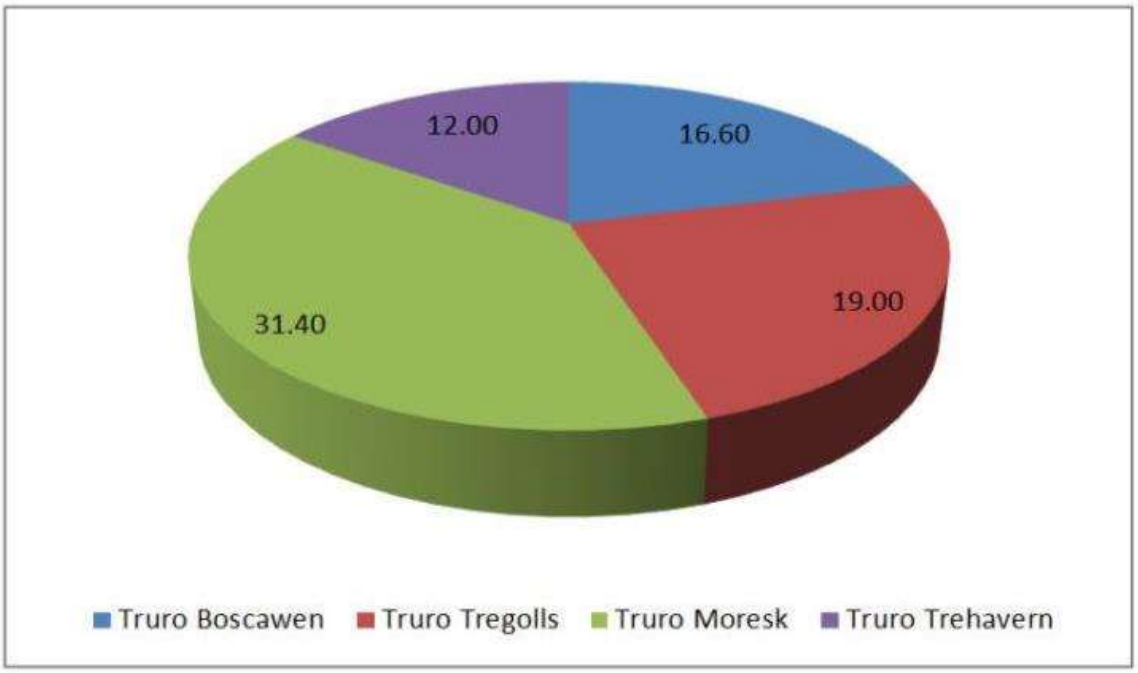

Figure 9: Population density by Truro ward – People per hectare

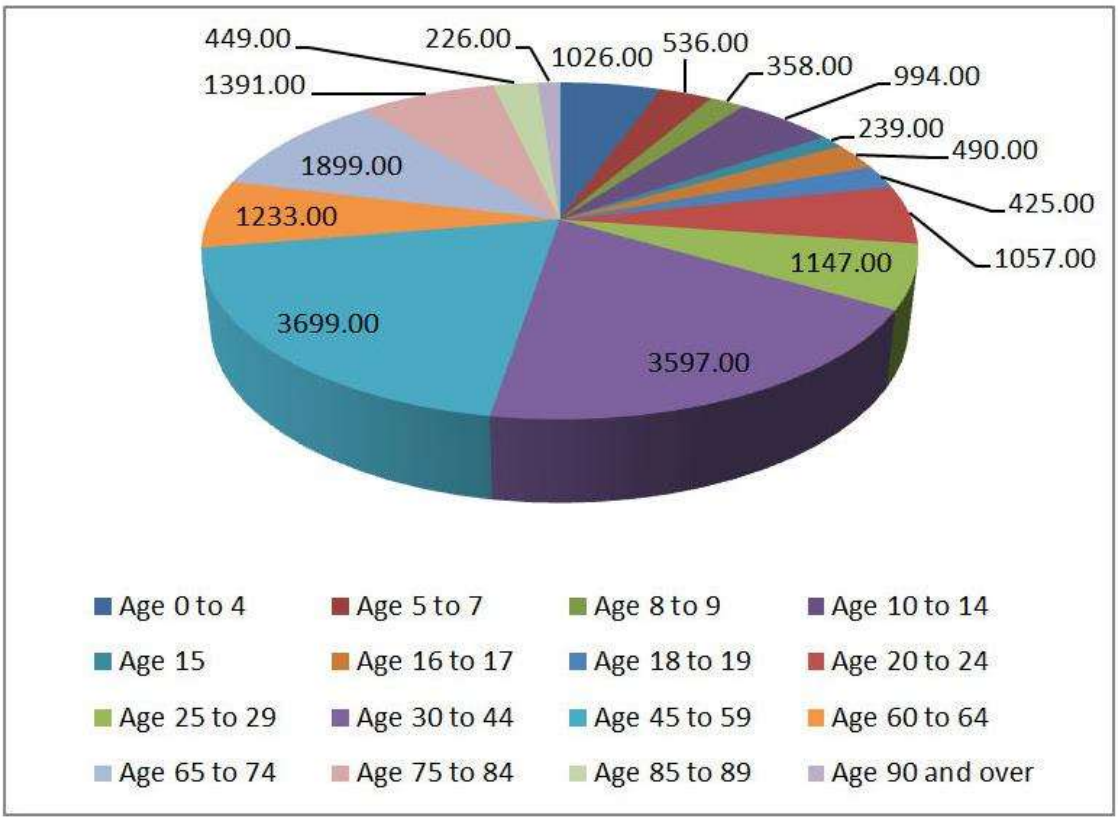

Figure 10: Age range of population in Truro

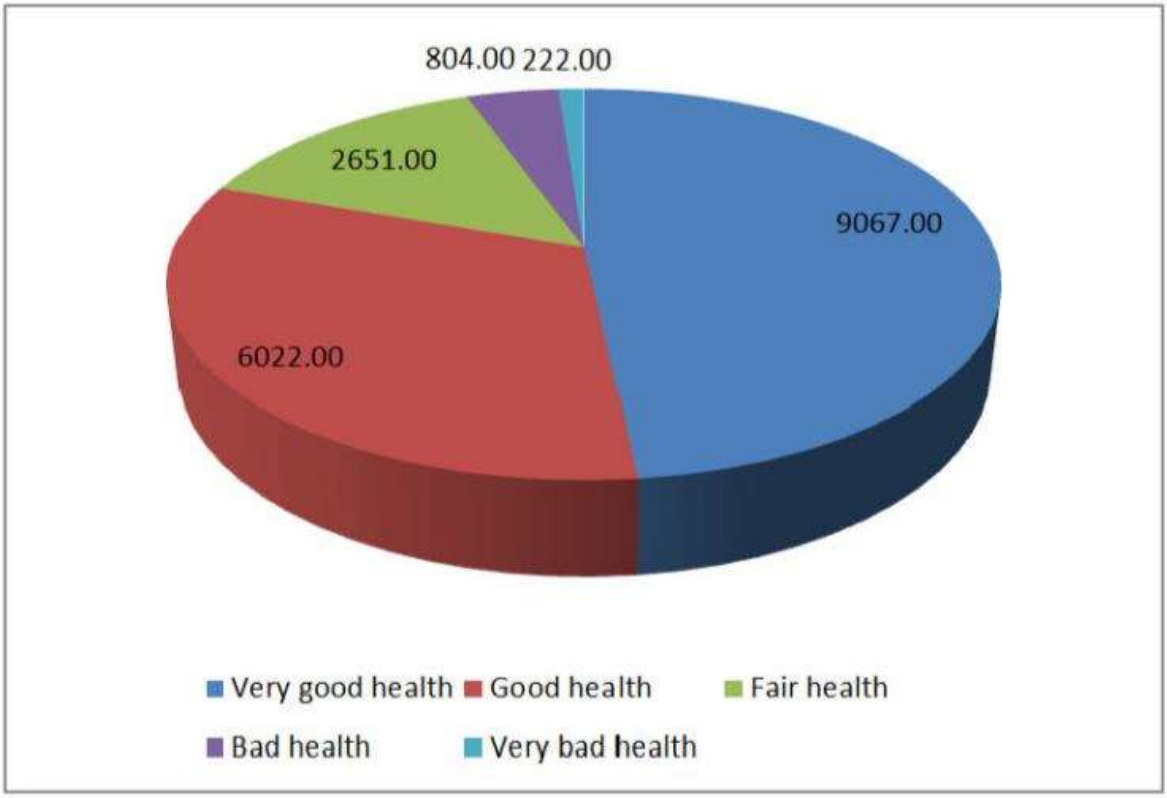

Figure 11: Health of population in Truro

4.4.3. Truro Visitors

Visitor data for Truro from 2012 stated the following headline figures:

- 52,000 staying visitors
- 873,000 day visits
- £42.2 million direct visitor spend
- £44.6 million total visitor related spend
- 1,200 actual jobs supported by visitor related spend

Reasons for trips were holiday (~15,700), business (~9,100), visits to friends and relatives (~22,000) and other (~4,700) (total ~51,600). Truro is visited by substantially more people than the number of resident population, and an enhancement of offerings for visitors in the city as part of the Truro Loops scheme could have substantial economic benefits.

Visitor data for the summer and autumn of 2016 suggest the following key types of attractions or places of interest, as shown in Figure 12. This shows strong emphasis of the

natural environment and outdoor related activities particularly in relation to the coast and water areas / estuaries, which again is a good indicator that the Truro Loops scheme would be beneficial for increasing visitor spend in the area.

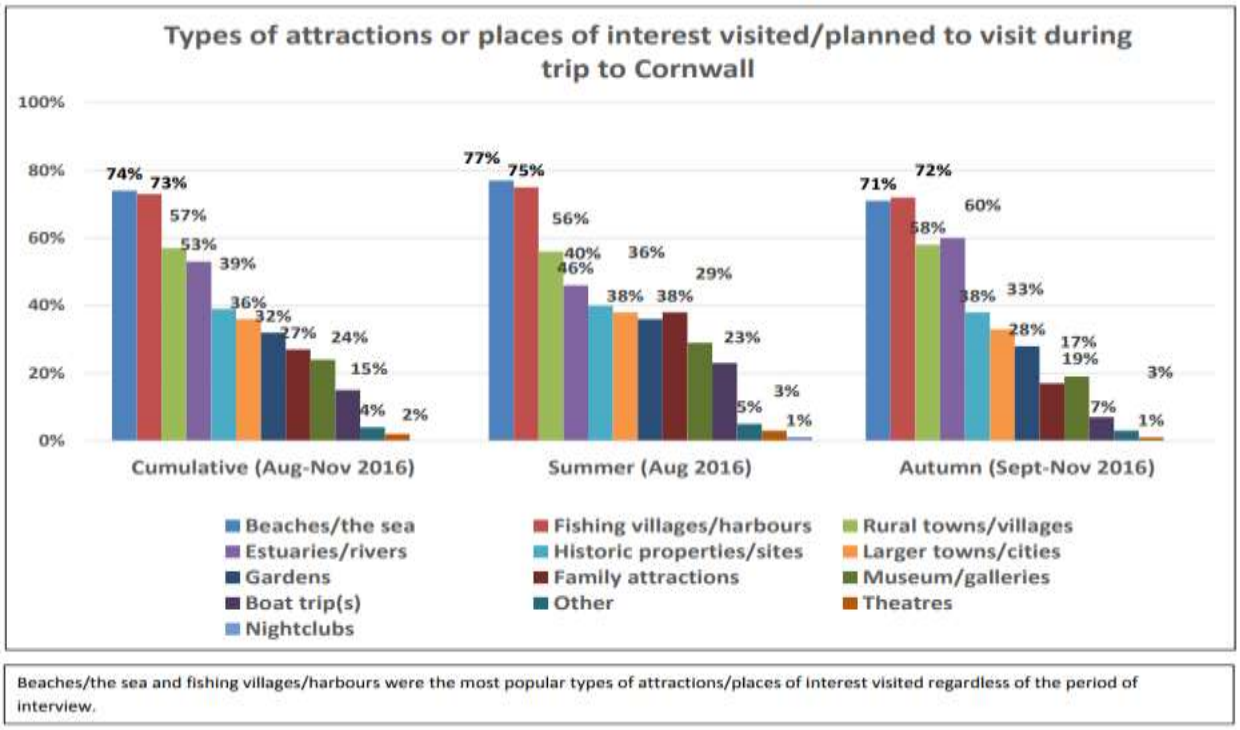

Figure 12: Extract from Cornwall Visitor Survey 2016 – Types of Attractions / Places of Interest visited / planned to visit

4.4.4. Social Issues on Loop Routes

Some evidence of anti-social behaviour and rough sleeping were identified during site survey work particularly for sections of routes associated with Loops 3 and 5.

4.5. Existing Visitor Facilities

The existing Tourist Information Centre (TIC) is located in City Hall, Boscawen Street, Truro TR1 2NE. It has a useful and up to date website using VISIT TRURO. It currently provides core TIC functions of City Promotion, Tourist information, "What's on", Visitor guidance and orientation. The site has some Heritage Promotion and Interpretation in a "History of Truro" section.

Environmental Promotion and Interpretation was not evident in the existing TIC.

The TIC Shop on Boscawen Street sells Cornish gifts directed at tourists (*"From lifestyle homeware, to locally produced food and drink and traditional souvenirs").*

The City centre has a broad retail offer with a range of independent shops and many

national chains represented often with their only Cornish branch.

Ticket Sales for transport and tours are generally available at the appropriate locations with the existing TIC website offering links to river trips, brewery tours and scenic railway trips.

Entertainment, as 'What's On', is covered on the TIC website which links to ticket sales, especially for the Hall for Cornwall

The nearest cycle hire (incl. electric) appears to be from Bike Chain Ricci, 82 Mount Ambrose, Redruth, TR15 1QR running the Bissoe Bike Hire but there is also http://www.cornwallbikehire.co.uk which delivers cycles to specific locations.

There do not appear to be secure cycle storage facilities within the city centre, although there are some bike lockers at Langarth P&R.

There is no dedicated boat hire in Truro. The Fal River Enterprise Boats come into Malpas and Truro connecting from Falmouth.

Catering and refreshments are well-provided for within the City. The provisions at other locations are discussed within the Visitor Centre Option Study included in Volume 2.

Toilet facilities are reasonably provided within the City. In 2013, the City Council took over the management of the public conveniences in Truro City Centre from Cornwall Council. There are six sets of toilets, Green Street (by the bus station), Lower Lemon Street, Bridge Street car park, the Leats, Moorfield Car Park and Boscawen Park, and these are generally accessible.

There are however no public toilet facilities along many sections of the loops, including Lighterage Quay and around County Hall. Cornwall Council operated public toilets are at Malpas, and there are toilets at Boscawen Park. There are plans to build new facilities at Boscawen Park adjacent to the car park, which would work well for Truro Loops.

There does not appear to be a registered Changing Places facility in Truro (accessible toilets with additional facilities and provision for people who cannot use standard accessible toilets). There are however changing facilities associated with the playing field at Boscawen Park.

4.6. Economy

The Economy and Culture Strategy for Cornwall states (similar data specifically for Truro could not be obtained):

"In 2009 total GDP in Cornwall stood at 9.5bn. GDP is the market value of all final goods and services produced within a geographical area within a given period of time. In relation

to each person employed, GDP is 17,600 per annum per capita. This per capita figure is 72% of the EU average (and 65% of the UK average). … Cornwall's total Gross Value Added (GVA) stood at £7.5bn in 2011. GVA is the value of the goods or services as they leave a sector or area, minus the cost of inputs used to produce them. GVA on a per capita basis is £13,848: lower than the UK £20,873 (2011). In 2011 Cornwall stood at 66.3% of the UK average. This is the second lowest figure for all NUTS 2 regions in the UK (with West Wales and the Valleys being lower at 65%)".

The strategy includes the following summary of sectors and their status, see Figure 13.

Large (over £100m GVA in 2009) but not dynamic **Agriculture [Large £165m]** – relative decline in contribution to GVA, static employment but rising productivity **Construction [Large £387m]** – GVA and employment growth but falling productivity **Public administration and defence [Large £402m]** - GVA growth, falling employment and productivity	**Growing** **Retail distribution [Large £623m]** - GVA and employment growth and rising productivity. **Food and drink manufacturing [Large £239m]** – GVA and employment growth and rising productivity. **Air transport [Small £16m]** - GVA and employment growth and rising productivity. **Finance [Large £274m]** - GVA and employment growth and rising productivity. **Social work activities [Large £248m]** - GVA and employment growth and rising productivity.
Growing but declining productivity **Business services [Large £1,514m]** - GVA and employment growth but falling productivity (largest elements being 'Owning and dealing in real estate' and 'Letting of dwellings' **Hotels and catering [Large £445m]** - GVA and employment growth but falling productivity.	**Declining** **Fishing [small £10m)** - relative decline in contribution to GVA, static employment but rising productivity. **Other mining and quarrying [Small £25m]** – declining GVA, employment and productivity. **Motor distribution and repair and fuel retail [Small £77m]** – declining GVA, employment and productivity.

Figure 13: Cornwall's employment sectors and GVA output summaries with trends

(Extract from Economy and Culture Strategy)

In terms of sectors of employees in Truro, 49% work in public administration, education and health, followed by 20% in distribution, hotels and restaurants. There is a lot of scope to encourage these employees to walk or cycle to work, if access, safety and interest could be improved.

Table 3 summarises existing businesses associated with the various loops providing an indication of the existing diversity of the economy. This is not exhaustive and is intended to provide a high-level overview only.

Table 3: Businesses along the routes of Truro Loops

Type of business	Loops	Examples
Admin / service sector	1, 3, 4	County Hall, various offices along Loop 1 including solicitors and agents
Agriculture	3, 6	Farming landscape south of Loop 3 and Loop 6 encompasses a former farm, and is adjacent to farmland
Catering	2, 4	Pubs at Boscawen Park and Malpas Various outlets in Truro
Construction	1, 5	Kier offices at top of Malpas Road Various construction related companies in Newham Ongoing construction along A390 corridor
Education and Health	1, 3, 4	Schools east of Loop 1 Care homes and facilities in the City and along A390
Engineering	1, 5	Rhoda Mary project Various along Newham
Industrial	1, 5	Scrap metal firm at Lighterage Quay
Marine	1, 5	Associated with businesses in Newham and along Lighterage Quay
Retail	4	Various in the City
Utilities	5	South West Water sewage works
Visitor accommodation	1, 2, 4	Wide range of hotels, B&Bs and self-catering in the City Some camping / caravanning provisions in the areas surrounding the loops

4.7. Vessel Data and River Use

Vessel data to inform the bridge design was provided by Truro Harbour Master as follows:

- Required freeboard for bridges: No view on freeboard, Lighterage Quay infrequently awash with storm surge and big spring tides.
- Maximum sizes of vessels: Head room/ air draft at least 23m as two fairly regular yacht models visiting are lifting keel Southerly 42 air draft 18.73m and French design Ovni yachts of a similar design. Ovni air draft is 19.78m.
- Maximum width required for bridge opening: Maximum width dictated by flood gates approx. 13m.
- Draft of vessels: Two metre draft feasible, average for larger vessels is about 1.5m.
- Estimated vessel movements per day: Maximum 10 including in and out, average 2 to 4.
- Vessels can only use river during high tide and up to approx. 2 hours either side of high tide. For the bridges, it is envisaged that this means they can be left in a closed state for much of the day (when boat passage is not possible due to low tide) and would have to have a user operated opening mechanism to allow passage of boats for approx. 4 to 6 hours of each day and in emergencies. The issue of exact opening mechanisms and provisions will be explored in further detail during detail design for the bridges and will require a bespoke solution suitable to the specific Truro River environment and use.

The river is used by leisure and commercial craft. This includes the Fal River Enterprise Ferry Service, ships to collect scrap at Lighterage Quay, boats associated with harbour maintenance, yacht owners, canoe users, and small boat owners.

The number of abandoned or un-maintained boats along the river sides creates an ongoing issue of administration for the Harbour Authority, as well as posing environmental risks and causing disagreement with or comments from members of the public. There is currently no easy mechanism to deal with this issue, as a boat can be owned without license and it is often difficult or impossible to trace owners or, if known, to compel them to keep up maintenance. This is therefore likely to remain an ongoing issue and it is not an issue that can be addressed as part of the feasibility study for Truro Loops.

4.8. Transport

Census 2011 data show that a total of 4,776 people that have completed the census in Truro travel to work using a car or van, compared to 159 on a bicycle and 2427 on foot, as shown in more detail in Figure 14.

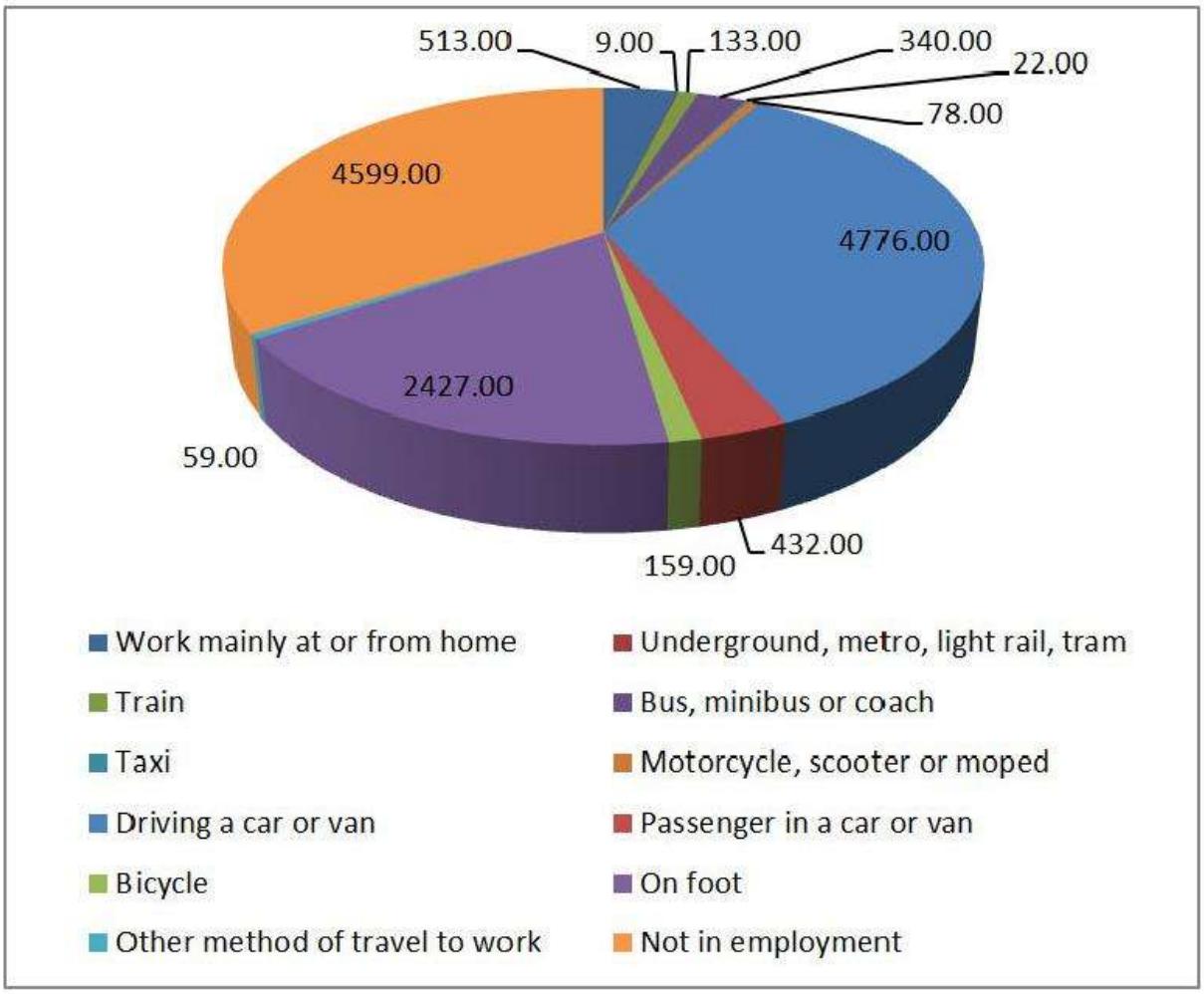

Figure 14: Mode of travel to work

(Diagram generated from data available from www.ukcensusdata.com)

The Travel to Work Profile for Truro[vi], prepared in 2015 by Cornwall Council / WSP, has found that in Truro approx. 15% of people travel less than 2km to work, 11% 2 to 5km, and 14% 5 to 10km (the rest, 60%, travels over 10km). Improvements arising from the Truro Loops projects along routes could help to encourage more people for the shorter distances to cycle or walk. Some of the key findings of the Profile study are:

"… For overall mode of travel to work to and within, Truro shows far lower levels of

working at home, higher levels of driving a car/van, higher levels of public transport use (especially by bus) and similar levels of walking to work when compared to Cornwall.

There is also a significantly higher number of 10-20 km trips into Truro, compared to the overall Cornwall average, reflecting the strong draw of Truro.

While there are strong levels of walking, cycling and public transport use, the striking issue remains the cumulative impact of car trips. There are trips by car/van across all distances (e.g. 500 trips from over 60km away) with nearly 7,000 travelling between 10 - 20 km. This illustrates the ongoing need to understand, monitor and respond to these flows. …

The differences in the workplace population of Truro are marked with far higher percentages of full time workers and fewer self-employed than Cornwall averages.

Truro attracts 17,826 workers and exports 3,161".

Hydrock Consultants have undertaken a project specific desk study and non-motorised user assessment, which is included in Volume 2. Their review was focussed on analysis of existing roads, pavements and Personal Injury Data (PIR) for pedestrians and cyclists. The loops are described in highway terms as follows:

Loop 1 – Truro River: This Loop lies at the centre of the proposed scheme, it is the loop that will deliver the river crossing(s), but it is also the loop most heavily impacted by the A390 Morlaix Avenue. There are existing under-passes that can be used as they are, but both would benefit from modernisation.

Loop 2 – Boscawen Park: From a highways perspective there is little to be said regarding this loop other than it has the great advantage of being segregated.

Loop 3 – West Cornwall Railway Track Bed, A390 and Higher Newham: This is an existing part of NCN3. It could be improved in terms of surfacing and maintenance. In highway terms this has the great advantage of being segregated.

Loop 4 – Truro City: This loop is the most intensive in terms of highways considerations. It is also considered likely to be the most attractive to out of county visitors. Delivery of this loop could be largely achieved by wayfinding sign posting and utilising existing infrastructure.

Loop 5 – South Newham and Calenick Creek: Lighterage Quay is a primary

consideration in delivering Loops 1 and 3; it is also a useful way to extend Loop 4. As such, highway improvements in this area are highly desirable, if not a necessity.

Loop 6 – Malpas and Moresk Forest: This Loop would incorporate part of Malpas Road that is devoid of footway and subject to a derestricted speed limit (60mph). However, it is not necessarily unsuitable because of these factors. The danger to cyclists/walkers can be mitigated to some extent with appropriate highway signing. Much of this loop is segregated from vehicular traffic or utilises very low use lengths of carriageway.

Truro is not a straightforward city in terms of its highway infrastructure; it is a mix of rural, sub-urban and highly urban roads/streets within a geographically limited area. Truro's east/west axis, being the longer of the two, measured between Treliske and Tregurra Park, is approximately 4.5km in length; the north/south axis, measured between the top of Kenwyn Hill and Boscawen Park, is approximately 3.5km in length.

The city has a major distributor/through route, the A390, that provides the most significant challenge in highway terms, the A390 Morlaix Avenue being the most obviously problematic length of this road. However, there are existing means of crossing the A390 that would be well located to ensure safe movement of cyclists and pedestrians to either side of the A390.

There are areas in Truro where there are notable pedestrian and cyclist accident clusters (black spots) that would ideally be avoided. It is acknowledged that avoiding some of these areas, for instance River Street, would limit access to some of Truro's main attractors, such as the museum. In reality, users of the City Centre loop would probably be content to cycle through accident cluster areas, accepting what is in fact still a low risk of being involved in a road traffic accident.

In terms of the central loop, which incorporates Newham Road and Malpas Road as the two major elements, there are considered to be no overriding concerns with regard to highway safety. Rather it is the amenity of these routes that could be addressed to good effect. On the Newham Road side, the area of Lighterage Quay/Lighterage Hill where the lower of the two potential bridges would be located is not currently "attractive" for non-motorised users.

PIA data show accident hotspots in the city centre western approach, i.e. Frances Street, River Street, St Nicholas Street and King Street and centred on the roundabout junction of the A390 Morlaix Avenue with Garras Wharf/Fairmantle Street. The Trafalgar roundabout junction also has a small cluster of PIA incidents. PIA incidents resulting in serious injuries being sustained were also recorded at Arch Hill and the junction of the A390 Highertown with the Station Road northbound spur. In the overall PIA study area, 28 incidents were

recorded as causing slight injury whilst 10 were recorded as causing serious injury. There are no fatalities recorded. Full details and a map showing these are included in the Hydrock report in the appendices.

Traffic count data were examined where available (there is only limited information). These are summarised briefly in Table 4 and further details are in Volume 2 in the Non-Motorised User Assessment.

Table 4: Overview of Traffic Count Data for Morlaix Avenue, Newham Road and northern end of Malpas Road

Road (Year of Count)	**12hr Into Junction all vehicles**	***HGV 12hr Into Junction***	**12hr Out of Junction all vehicles**	***HGV 12hr Out of Junction***	**12hr Two Way Flow all vehicles**	***HGV 12hr Two Way Flow***
Morlaix Avenue (2016)	13,207 (Westbound)	*475 (Westbound)*	11,548 (Eastbound)	*444 (Eastbound)*	24,755	*919*
Newham Road (2015)	296 (Northbound)	*40 (Northbound)*	242 (Southbound)	*43 (Southbound)*	538	*83*
Malpas Road (2015)	2,180 (Northbound)	*43 (Northbound)*	2,157 (Southbound)	*39 (Southbound)*	4,337	*82*

The Morlaix Avenue count was conducted at the Arch Hill/Falmouth Road/Green Lane Morlaix Avenue junction. The Newham Road count was conducted at the junction of Newham Road/Lighterage Hill/Lighterage Quay. The Malpas Road count was conducted at the junction of St Clements Hill/St Austell Street/Tregolls Road/Morlaix Avenue/Malpas Road (Trafalgar Roundabout).

There is a significant number of Cornwall Council (CC) owned public car parks in Truro, providing a total of 3,082 parking spaces. Table 5 presents all the car parks considered to be located so as to provide suitable parking options for people wishing to utilise one of the Truro Loops. The list is presented with the car park nearest to Loop 1 first.


AY56 XSZ

Table 5: Parking Locations and Numbers potentially suitable for Truro Loops users

Nearest	Name/Location	No. of Spaces
1)	Garras Wharf	336
2)	Lemon Quay	395
3)	Tabernacle Street	90
4)	Moorfield	681
5)	Old Bridge Street	124
6)	Highcross	458
7)	Carrick House	146
8)	Moresk	118
9)	Viaduct	338
10)	Pydar Street	93
11)	Edward Street	83
12)	Truro Railway Station	220
Total		**3,082**

4.9. Flood Risk

Hydrock Consultants have reviewed the project area for flood risk and their report is included in Volume 2 including drawings and figures referred to below, refer to the report for full details. A summary of the findings is below.

The proposals are for the provision of six cycle loops, with further possible connections across the south of Truro. An FRA is required as it has been recognised that parts of the network are within Flood Zone 2 (Medium Risk) and 3 (High Risk).

The loops both cross and run along the banks of the River Kenwyn, River Truro, River Tinney, and a number of other smaller watercourses and ditches. Some reaches are shown to be within the Environment Agency Flood Zone 2 (Medium Risk) and Flood Zone 3 (High Risk).

Environment Agency mapping shows many existing roads (primarily in the centre of Truro) along which the loops are proposed to be at a low-medium risk of surface water flooding, though much of this is likely to be managed by highways drainage.

The permeable sandstone geology over much of the site is conductive to groundwater flows, and there is therefore low risk of egress at the bases of any steep slopes. The overall risk of this is considered to be low, and there is a low risk of flooding from sewers and other infrastructure failure.

Historic flooding records show Truro has been affected by a number of fluvial, tidal, combined fluvial-tidal events, and surface water flooding events in the past.

Two new bridges across the River Truro are proposed, and recommendations for minimum soffit level are provided. Recommended minimum soffit levels are to minimise the risk of damage to the bridge and bridge supports from flooding.

The proposals are considered 'water compatible' with respect to flood risk, and suitable within all Flood Zones. The development is therefore considered to be in accordance with the Sequential Test.

It is recommended that signage be used at the ends of sections that cross into Flood Zone 3 to warn people not to use these parts of the network or bridges across the Truro River during flood events.

Data received from the Environment Agency includes contingency for the impacts of Climate Change.

The loops are located across the River Truro and River Tinney Critical Drainage Areas (CDAs), and any works to manage surface water run-off should consider the specific conditions required in these areas and adopt appropriate SUDS techniques.

As such, provided a sequential approach to the development locality and an appropriate SUDS solution is employed the application would meet the requirements of the NPPF.

4.10. Geology and Soils

Detailed geology and soils studies were not commissioned as part of this feasibility study. Overview information has been obtained from the publicly available sources at Geology of Britain and Landis Soil Survey. Extracts from the geology and soils maps are in Figure 15 and Figure 16.

The geology of much of the area covered by the Truro Loops feasibility study consists of Porthscatho Formation. This is defined by Sandstone and subordinate Argillaceous Rocks, interbedded. The sedimentary bedrock formed approximately 372 to 388 million years ago in the Devonian Period. The local environment would have previously been dominated by deep seas and these sedimentary rocks are marine in origin. They are detrital and comprise coarse- to fine-grained slurries of debris from the continental shelf flowing into a deep-sea environment, forming distinctively graded beds. Along the Truro River, this geology is overlaid by superficial deposits of tidal flat deposits consisting of clay and silt. These are described as having formed up to 2 million years ago in the Quaternary Period, in a local environment previously dominated by shorelines. They are shallow-marine in origin, and generally coarse-grained forming beaches and bars in a coastal setting.

More localised geology information from the ground investigations associated with

Lighterage Quay improvements (as provided by the Environment Agency to inform the data search for the feasibility study) was reviewed to inform the bridge feasibility. This correlates with the general information, with the Porthscatho formation found min. 6.5m deep and mud stones and alluvial gravels and silts above that. The ground investigation reports are included in Volume 3 to this feasibility study for information (ref C6691 Newham SI.pdf, Ian Farmer Associates. Dec 2010).

The Truro Loops area is covered by two main soilscapes – Soilscape 13 (freely draining acid loamy soils over rock – covering Boscawen Park, Moresk Forest area and Malpas) and Soilscape 6 (freely draining acid loamy soils - covering the other areas). There is a small area of Soilscape 20 (loamy and clayey floodplain soils with naturally high groundwater) around Calenick and the A39, but outside the Truro Loops area. The Truro River is shown as Soilscape 0 - Sea.

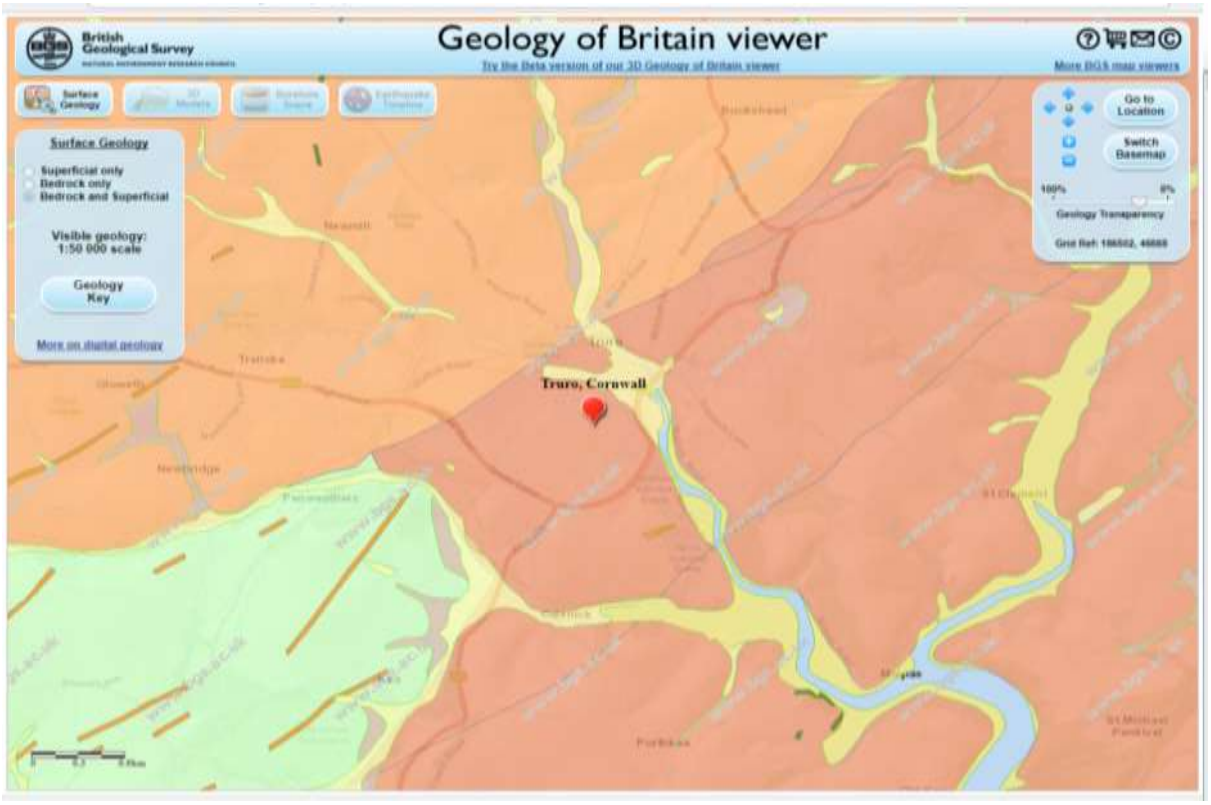

Figure 15: Geology of Britain overview for Truro area

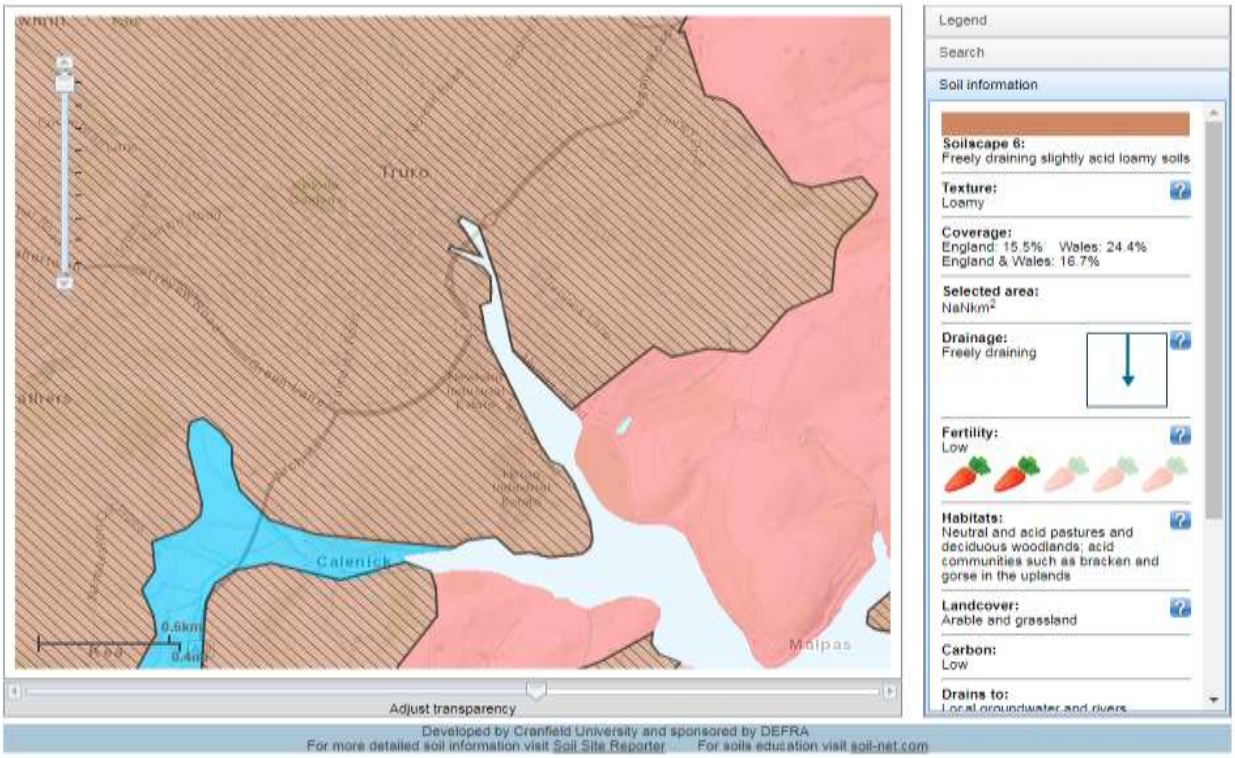

Figure 16: Landis Soilscapes overview for Truro area

(Main Soilscape 6 highlighted in striped pattern)

4.11. Landform, Topographical and Bathymetry Data

Landform in the overall Truro Loops area is shown on Figure 17. Elevations vary from below 0m AOD at river level to 76m AOD at the high point north of Malpas / east of Boscawen Park. Essentially the area is dominated by the river valley and rising ground with side valleys, creating an undulating to rolling landscape of high scenic quality.

Loops 1, 2 and 5 are on relatively flat ground with only minor variations in elevation. Loop 3 is on relatively flat ground for its southern and northern long sections (although at different elevations), with steeper sections to the west and east. Loop 4 is in the city with some flat and some rising sections. Loop 6 is the most challenging with greatest level differences. A summary of loop route lengths and elevation ranges is in Table 6.

The desk study identified that there is limited detailed topographical and bathymetry information to assist in the development of the bridge options. A localised topographical survey will be required to develop the bridge options further, in later stages of the scheme. Some bathymetry data was available for the river bed south of the flood gates and around the flood gates in association with as-built information for them as well as information associated with the renovation of Lighterage Quay. This information was made available for

review to the team by the Environment Agency.

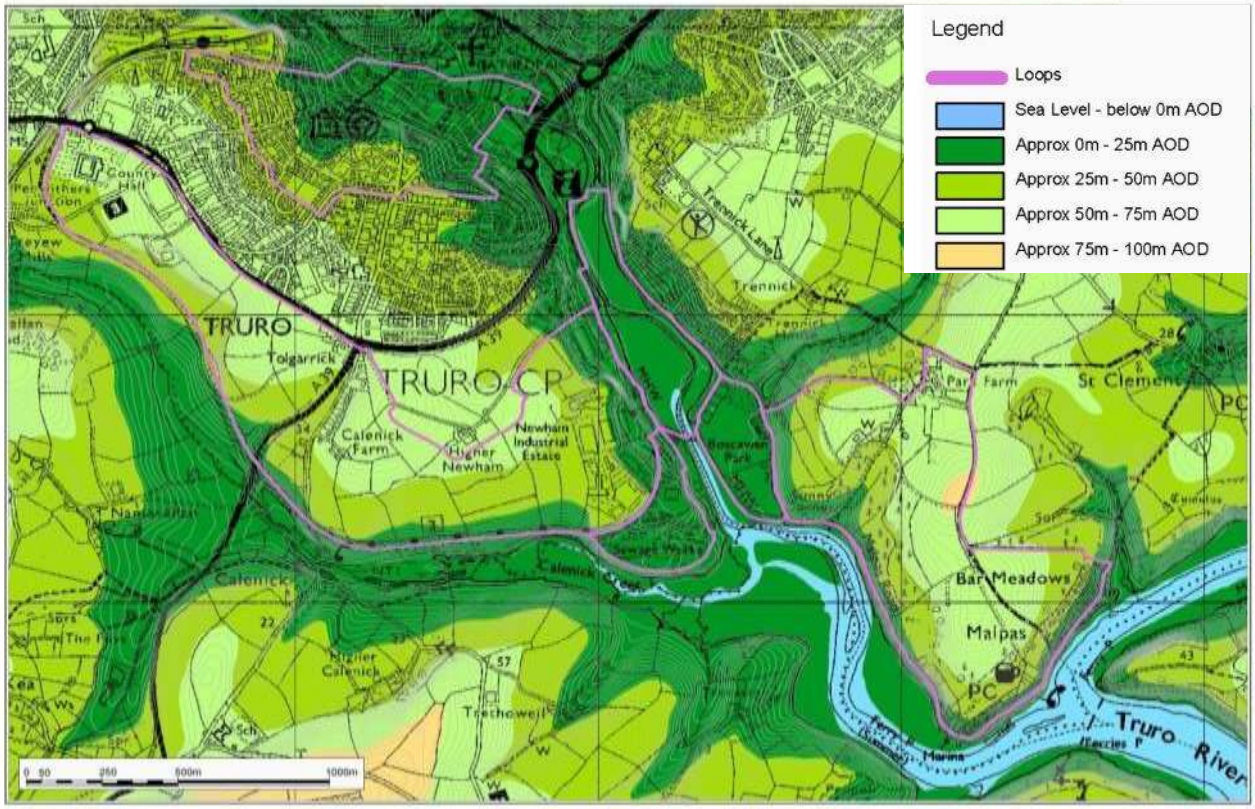

Figure 17: Landform in wider area, with loops overlaid

Table 6: Loops lengths and elevations

Loop	Length	Elevation range (approximate)
Loop 1 – Truro River	2.16 kilometre / 1.34 miles (excluding city link)	0 to 7m AOD
Loop 2 – Boscawen Park	1.27 kilometre / 0.78 miles	0 to 7m AOD
Loop 3 – West Cornwall Railway Track Bed	6.03 kilometre / 3.75 miles	0 to 73.5m AOD
Loop 4 - City	3.23 kilometre / 2.01 miles	0 to 44.5m AOD
Loop 5 – South Newham and Calenick Creek	1.57 kilometre / 0.97 miles	0 to 29m AOD
Loop 6 – Malpas and Moresk Forest	4.37 kilometre / 2.71 miles	0 to 76m AOD

4.12. Ground Investigation Data

Detailed ground information is not available at this stage. An application to the

Environment Agency was made to obtain topographical and ground information produced when the existing wall at Lighterage Quay was strengthened. Information is included in Volume 3, Appendix V3-08. This information has been used to formulate the bridge development.

Some ground information was extracted from public sources, such as the British Geological Society. This has indicated that the local ground conditions are likely to be soft alluvial clays overlying mudstone at depth. The local ground conditions will need to be confirmed if the bridge options are to be developed further. It is assumed that there has been no historical mining in the bridge locations.

4.13. Contamination and Waste

In discussions during the site visit it was noted that Boscawen Park was constructed on contaminated fill. Future ground investigation will confirm the influence of such contamination on the bridge location. It has been assumed that the foreshores and river bed are contaminated due to historic harbour, river side industrial and river uses, as well as the catchment being an urban area, and the implication of this on the foundation arrangement has been considered.

The same applies to the Garras Wharf Bridge as discussions held during the site visit similarly indicated that the foreshores may be contaminated, due to historical industrial use.

Contamination may also be an issue for any localised dredging proposals, river bank remediation works and boardwalk installations. Detailed surveys will have to be included in any future proposals.

Fly-tipping was noted along loops 3 and 5 – this will require appropriate remediation.

4.14. Utilities

High-level utility searches were undertaken for the bridge project areas, and some additional data on electricity and gas supplies were located by Hydrock. These are all included in Volume 3, Appendix V3-06.

Before any highway or bridge works are undertaken detailed site specific searches for all utilities will be required. From the searches undertaken to date it is clear that Newham Road and Lighterage Hill have underground High Voltage cables in place, these cables are part of the Western Power Distribution network. The depth of these cables is unknown but it is unlikely that surfacing works or even kerbing such as required to re-profile a junction layout, would impact upon the cabling. There are also gas supplies in the area. Whilst

none are located within the immediate bridge footprint, some diversion allowance may have to be made for verges and landing areas of bridges.

The other utility search returned was a small underground gas supply network, owned by the ESP Utilities Group. This network is an extension of the Centrica network. The only element of this network in the vicinity of the search is remote from any area of highway likely to form any part of a loop.

The Harbour Master advised that on British Admiralty Chart 32 panel A, a sewer is shown running across the river about 200m below the entrance to Tesco, Garras Wharf. A gas main is shown running from Garras Wharf to property adjacent to Malpas Road. This should be verified with more detailed utility data searches for any future project that may require ground penetration or pavement modifications, including for the bridges.

4.15. Ecology

An Ecological Survey Report is included in Volume 2, Appendix V2-01; refer to report for full details.

There are several designated sites of nature conservation importance that lie within the zone of influence of the project. These will need to be considered as the project progresses, and dialogue maintained with the statutory stakeholders. The key sites are:

- Fal and Helford Special Area for Conservation (SAC)
- Malpas Estuary Site of Special Scientific Interest (SSSI)
- Upper Fal Estuary and Woods SSSI
- Nansavallon Wood County Wildlife Site (CWS)
- Tresillian River CWS
- Lower Truro River CWS
- Upper Truro River CWS
- Cornwall Roadside Inventory Site Biological site number 30
- Fox Corner Wildlife Trust Reserve

There are also several areas of ancient semi-natural woodland, these lie within SSSI and/ or CWS, as listed above.

The study area also lies within a priority project area of the Cornwall Biodiversity Action Plan, 'Truro Development – Growth Point', which highlights the importance of the green infrastructure in this area.

In general, the proposed loops are located within urban or urban edge environments, which are already subject to varying degrees of human activity. The habitats of highest sensitivity are the intertidal habitats that occur adjacent to the Truro River, Boscawen Park, South Newham / Calenick Creek and Malpas / Moresk Forest Loops. These habitats are all within designated sites (as discussed above), and additionally are considered to be Habitats of Principal Importance, under the Natural Environment and Rural Communities Act (2006). These habitats are intrinsically important, and also offer habitat for nationally important assemblages of water birds. There are also areas of broadleaved woodland along some of the routes, which are ecologically important habitats.

A number of non-native invasive plant species have been recorded both from the desk study and from site surveys.

Protected species such as bats, birds, dormice, badger and reptiles have been recorded from the desk study in the vicinity of the loops project areas. Confirmation of presence/ absence of these species was beyond the scope of the site surveys undertaken as part of this report. Species groups such as birds, bats and reptiles may use habitats within/ adjacent to the proposed loops throughout the project area, but the presence of species such as badger and dormouse are likely to be more localised.

4.16. Landscape and Visual Conditions

A Landscape and Condition Survey was undertaken as part of this Feasibility Study, and results are included in the separate report in Volume 2, including drawings showing landform, landscape character and landscape designations. Below is a summary of key points describing the landscape in the study area. For comments on condition and photographs refer to the report in Volume 2.

Landform within the surrounding area is defined by the creeks and valleys of the River Fal tributaries and the Fal itself, including Calenick Creek which joins the Truro and Tresillian River at Malpas. The slopes of the creek rise steeply from sea level to 90m around the northern fringes of Truro, Malpas and across the river at St Michael Penkivel and Tregullas (south of Truro). The lower slopes of the creeks are well wooded with broadleaved woodland. There are several mature wooded areas across the river slopes up to higher ground particularly around estates and farms such as Tregothanan. Mature Monterey Cypresses and other trees forming features in the local landscape. Smaller villages outside Truro were built to serve the historic mining and shipping industries before the creeks silted up and are clustered at the water's edge. Large farms and estate properties are scattered across higher ground with a number of large residential properties along the river. Outside

the edges of the Truro the landscape becomes rural focussed on the waters of the creeks and rivers with tourism and leisure playing an increased role.

At a national level the site and study area is covered by **NCA152 Cornish Killas** which is a large area with many key features distilled into and described in the local description.

The study area is predominantly covered by **LCA13 Fal Ria, Truro and Falmouth**, with areas of higher ground represented by LCA11 Redruth, Camborne and Gwennap and **LCA16 Mid-Fal Plateau**.

The overall character of the area is closely represented by **LCA13** particularly the influence of tidal creeks, wooded slopes and expanse of farmland beyond the urban fringe of Truro with some elements and key features associated with **LCA16**.

The study area is partially covered by **AONB South Coast Central** (The Fal Ria and the Roseland) reflecting the overall quality of the area's landscape. The AONB covers two distinct landscape character types, the Fal Ria and the Roseland – it is the Fal Ria which is reflected in the study area. Its landscape is defined by the rivers of Truro and Tresillian which sit upstream from the Fal and Ria with creeks extending into more folded enclosed landforms where the woodland becomes more dominant around large private estates such as Tregothnan and the stretches down to the water's edge. The tidal rivers and wetlands provide important habitats with a few small villages located at the heads of the creeks such as Calenick Creek.

National Cycle Route 3 Engine House Trail covers approximately 24 miles starting from Hayle and terminates at Truro where The St Piran Trail can be picked up to continue further north. The trail, as the name suggests, shows the industrial heritage of the intensively mining landscape and is now part of the Cornish Mining World Heritage Site due to its global significance. Loop 3 incorporates some of this route.

There are a number of local **Public Rights of Way** in the study area. The loops proposal is largely aimed at using existing routes and providing better/safer connectivity between them, and improvements to them.

4.17. Heritage Assets and Historic Landscape

A search was commissioned with the Cornwall Council HER, and data are included in Volume 3, including a map of heritage designations. The interactive online mapping was reviewed for historic landscape character information, an overview of which is included in Figure 18.

There are various **Listing Buildings** and features throughout the study area with the main concentration around the city centre where the key focus is Truro Cathedral (Grade 1) of merit for its architectural and historic significance. Other key architectural features are collected along the key streets of Truro such as Lemon Street, Frances Street, Pydar Street and Prince's Streets. Outside Truro small isolated clusters of individual listed features are focused around smaller settlements such as Malpas, St Clement, Calenick and Kea.

Conservation Areas within the study area are Truro and St Clement. For Truro, there is also a Historic Characterisation report produced as part of the Cornwall and Scilly Urban Survey[vii].

There are only a few **Scheduled Monuments** throughout the study area, some with direct association with the loops. Some of the key designated assets are as follows; refer to maps and Historic Environment data in Volume 3, Appendix V3-07 for full details:

The northern part of Boscawen Park is a designated Scheduled Monument, as a late C19 park, built on site provided by Lord Falmouth and the Duchy in the late 1880s. The level crossing of the Sustrans route along Loop 3 with the Old Truro Road is a designated Scheduled Monument as a level railway crossing (The Newham branch crossed the road to Calenick on the level.) There are also designations associated with the historic Calenick quay and lime kiln near the Rhoda Mary shipyard. The Upper Newham Quay, on the Truro River, is recorded in a location west of Lighterage Quay on the 1845 Tithe Map. On Sunny Corner, there is a record for post-medieval well, and Sunny Corner House, Garden area wall and quay are Grade II listed. There is a designated record in Malpas as a medieval settlement; the settlement of Malpas is first recorded in 1383. There is also a medieval quay / ferry terminal.

There are publications about Truro and its history, including its harbour – these will provide valuable information for interpretation and education projects and should be reviewed for specific projects and purposes arising from this study. A key resource is the series of books in A History of Truro by Viv & Bob Acton[viii]. Some basic information on the history of Truro Harbour can be found at http://www.newhamtruro.co.uk/about/history.

Historic landscape is characterised by large areas of urban development along Newham, Malpas and in the city, and medieval farmland for many of the rural parts.

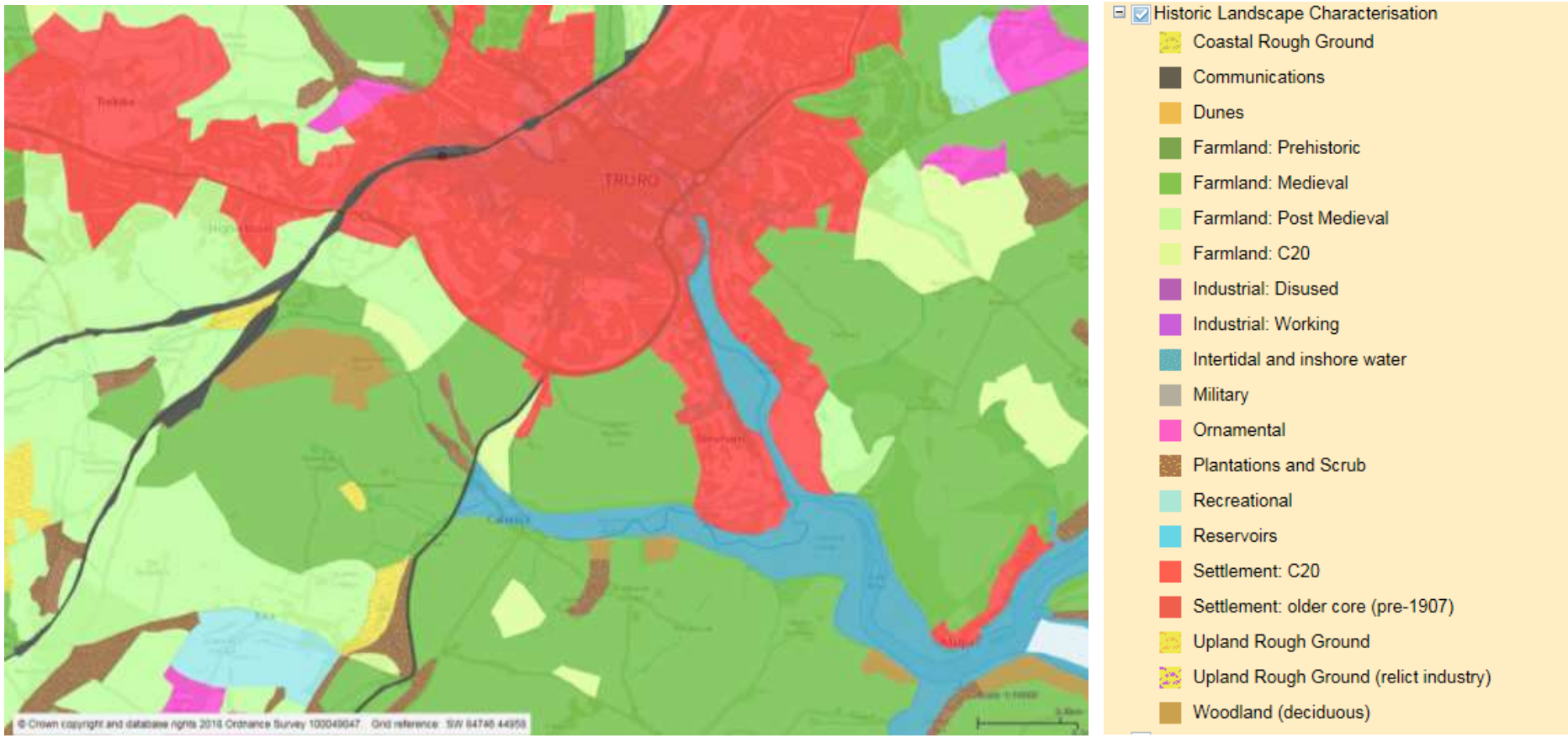

Figure 18: Historic Landscape Characterisation across the Truro Loops Study Area

5. Key Opportunities and Constraints

This section summarises key opportunities and constraints arising from the desk study, site survey and consultation inputs as a basis for option analysis and project definition.

5.1. Key Considerations for Loops

General key considerations for all loops are:

- Gradients and ease of access
- Existing condition of elements such as surfacing, railings, gates, signage (see Volume 2 – AppV2-02)
- Safety of use and conflicts with other uses such as cars, commercial and harbour uses or road crossings
- Connectivity with other routes, uses and loops
- Ecological, landscape and heritage constraints
- User profiles
- Potential economic, social and environmental benefits

A summary of general and specific considerations for each loop are outlined below. Options are then explored in section 6, and projects that are considered reasonable and feasible defined in section 7 as appropriate.

5.1.1. Loop 1 – Truro River

An overview of Loop 1 is in Figure 19. This loop is defined by the river, Malpas Road and Newham Road, with its southern limit at the flood gates / Lighterage Quay and its northern limit at Morlaix Avenue. Both bridges are associated with this loop, required to link Newham to Boscawen Park and Malpas to the city in a pedestrian and cycle-friendly way.

The loop route is flat and largely follows existing routes and pavements. There are serious limitations of pavements suitable for pedestrians and cyclists along both Newham and Malpas Roads. This prevents full and easy access for vulnerable groups and deters other users to some degree.

Connectivity to the city centre is limited and disrupted by Morlaix Avenue. Whilst existing underpass crossings exist, these are not inviting and lack imagination to convey the crucial link between the city and its river. Morlaix Avenue, Trafalgar Roundabout and the top end of Malpas Road are particularly uninviting environments for pedestrians and cyclists, with limited pavements, busy crossing points and large amounts of traffic.

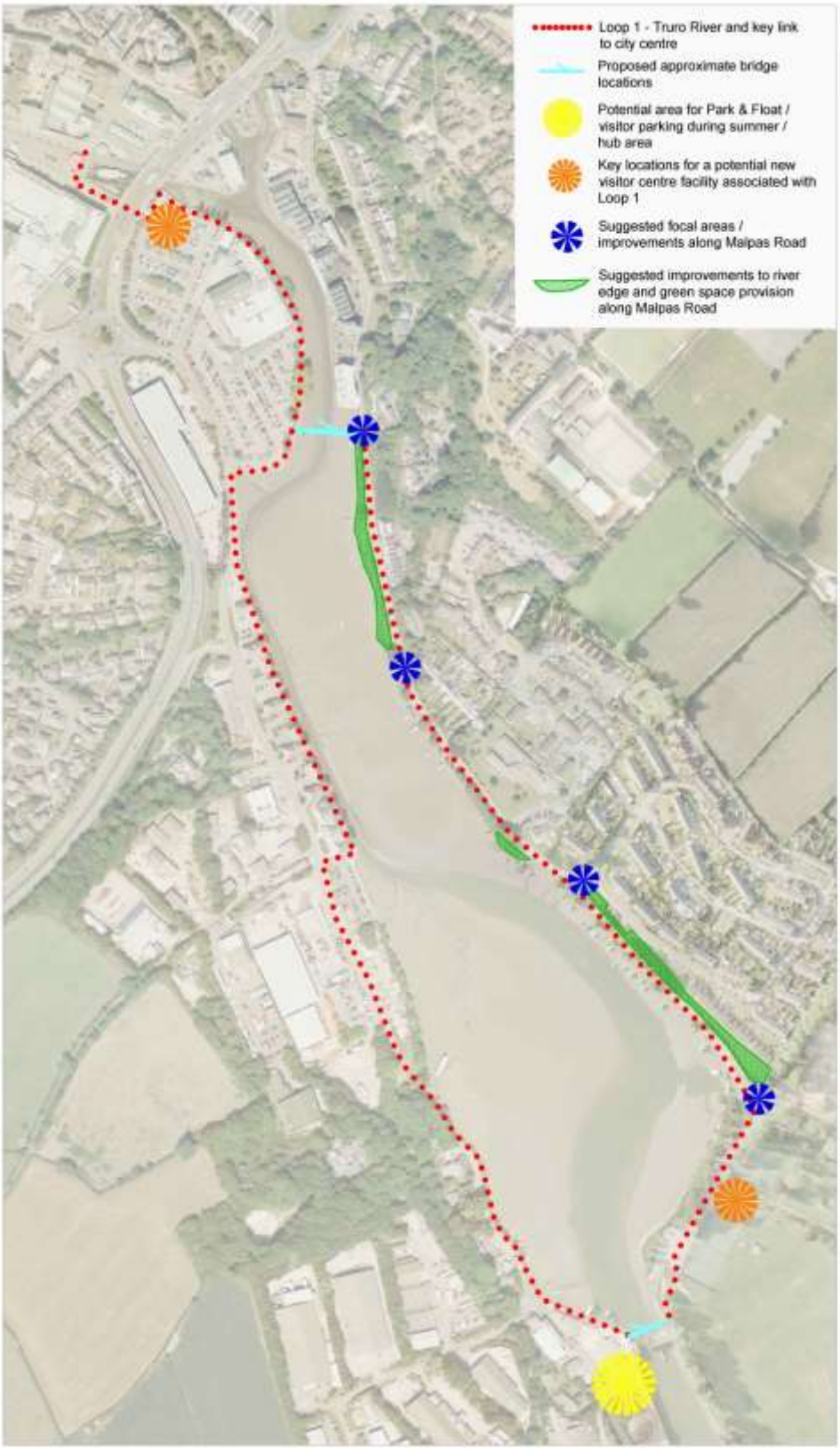

Figure 19: Overview of Loop 1

Pavement surfaces are inconsistent and would benefit from repairs and improvements, which in turn would lift the appearance of the whole area encouraging more users. Consistency of railings and signage would benefit from improvements throughout.

Existing uses along Malpas and Newham Roads mean there is significant potential for conflicts. Along Malpas Road this is largely due to cars travelling at some speed to destinations further south in combination with lack of or narrow pavements in places. The northern end of Malpas Road along the existing business uses is extremely busy and also more constrained in terms of available space. Along Newham Road, there is significant use by large lorries as well as cars. There are corners along Newham Road which do not have any or very limited pavements, which in combination with lorry traffic creates an environment that feels less safe to pedestrians and cyclists and creates a conflict of user groups.

Loop 1 is at the heart of the Truro Loops project and connects to all other loops. The quality and readability of these connections would have to be improved. The bridges would be required to achieve the full benefits here – without the bridges there will be no loop. With the southern bridge on its own, a loop could be created, although this would rely on use of the top end of Malpas Road, Trafalgar roundabout and Morlaix Avenue. With both bridges in place and some improvements to Malpas and Newham Roads, a reasonably safe and easy loop could be brought into existence.

This loop has the potentially greatest constraints in relation to ecology, landscape and heritage due to the amount of works likely to be required and the presence of internationally and nationally designated habitats (some of which would be affected by any bridge or boardwalk proposals), the presence of the AONB to the south and high visual amenity of the river views, and the heritage associated with the harbour, quays and port uses.

User profiles along this loop are very diverse ranging from heavy industry to vulnerable user groups such as low mobility and older residents. This makes it the most challenging loop in relation to this aspect of constraints, requiring detailed consideration of options for separation and / or integration of different uses during any future detail designs.

However, this diversity of users and the high quality and amenity of the natural environment in combination with the extent of proposals likely to be required to achieve a loop that is pedestrian and cycle friendly, also makes it the loop with best potential for creating strong economic and social synergies and helping to improve local environments.

Loop 1 Specific Transport Considerations

At Newham Road, the highway infrastructure to enable non-motorised user movement is limited and the predominance of industrial/wharfage land use attracts large vehicles through the Lighterage Quay junction that would necessarily be crossed to access the NCN3 railway bed (Loop 3).

Malpas Road is considered to be the "back bone" of the Truro Loops scheme in highway terms. At this time, Malpas Road serves a number of functions, being quite commercialised at its northern end, a residential distributor along the central section parallel to the river, the only vehicular access to Boscawen Park and the only vehicular access to the village of Malpas. This means that access must be available for all classes of vehicle, in essentially unrestricted volume, at all times. This has a direct impact upon the types of traffic calming permissible. This is not to say that changes in surfacing would be ruled out but black top bitmac is utilised as an optimal solution in terms of cost, maintenance and longevity. Maintenance costs are a major consideration for the Local Highway Authority (LHA) and it is far from certain that the LHA would permit changes in surfacing, even if implementation costs were funded by others, as the maintenance cost would be higher than bitmac and therefore unattractive to the LHA as a solution. However, options should be explored further with them during detail design, and compromises over limited areas are considered to be feasible and achievable.

Between Trafalgar Roundabout and Boscawen Park Malpas Road is subject to a 30mph speed limit and has an extensive traffic calming scheme in place. Beyond Boscawen Park to Malpas the speed limit is derestricted (60mph). It should be noted there are no non-motorised user personal injury accidents recorded on Malpas Road in recent years.

In terms of increasing the amenity for non-motorised users, consideration has been given to how the perception of road users can be altered, specifically prioritising non-motorised user movements over vehicle movements. However, given the multiple roles of the route, the existing traffic calming scheme and the limits to highway land, the opportunities for further engineering interventions are strictly limited. The potential for such things as table top junctions is restricted by the fact that Malpas Road is on a bus route and vertical deflection, whilst not prohibited on bus routes, should be avoided.

There is an unusual junction layout between Malpas Road and Pendeen Road the purpose of which is to provide a bus turning circle. Altering this area would do little to improve highway safety and this, along with the potential to increase maintenance costs with surfacing other than black top bitmac, would probably be resisted by the Local Highway

Authority. It should be noted however that the specific views of the LHA have not been sought, and detailed consultation with them on any specific Malpas Road proposals will need to form part of a detailed project as defined in section 7.

Where potential to improve the non-motorised user experience on Malpas Road does exist is on the footway/riverbank. Although there is no such potential at the northern end between Trafalgar Roundabout and Malpas House, and there are land ownership issues between Malpas House and approximately No.1 Trennick Row where there is no footway, beyond that there is a wide footway which could be suitable for improvement to "shared use" if some of the riverbank can be incorporated.

To reiterate and notwithstanding the above, the use of Malpas Road as it is, for non-motorised users is not considered to be an unreasonable highway risk and the amenity of the route is considered high due to the riverbank and Boscawen Park. Beyond that, towards Malpas the road is not unsuitable for cyclists but should be used with caution.

5.1.2. Loop 2 – Boscawen Park

An overview of Loop 2 is in Figure 20. This is an existing route that is on flat land. It is relatively short and easy to walk, being more suitable for pedestrians than cyclists. Part of the loop is along Malpas Road. The Park is used for active and passive recreation and includes formal playing field space. Truro City's Parks team maintains Boscawen Park and need to be closely involved in any proposals. There could be synergies between achieving park improvements, Truro Loops and ongoing future maintenance and management.

The existing perimeter path along the western side of Boscawen Park along the river is largely a compacted gravel surface, and in places river bank erosion is starting to interfere with the route. Erosion control measures should be explored that are sensitive to the context and can help to create additional habitat.

Views are over the river channel towards Lighterage Quay. There is some vegetation partially filtering views in places. Particular user conflicts do not appear to exist along the western side, but it is not a section that would be suitable for cycling (as this would create conflicts with walkers and other users) and it is not intended to promote it as such.

The Malpas Road section is relatively wide alongside the park and there are wide verges, with reasonable visibility along the road. This minimises potential conflicts between motorised and non-motorised users to some degree.

This loop connects with and shares short sections with loops 1 and 6. The existing park is heavily used already, but users largely rely on cars to get to loop 2. By creating loop 1 and

increasing awareness of options for non-car users, car pressure and parking pressure associated with use of loop 2 may be reduced.

Figure 20: Overview of Loop 2

Due to the managed nature of the park and existing uses in combination with limited requirements for improvements for this existing route, conflicts with ecology, landscape and heritage constraints are less likely. If erosion control measures along the western Boscawen Park side are explored, ecological constraints associated with the designated habitats and species will apply and associated surveys and consents may be required. The northern part of the park is a Scheduled Monument (c19 park), although this has been overlaid by modern uses as existing.

Users of the park are largely recreational – including walkers, joggers, dog walkers, sports,

and families. Road users would include those travelling to or from Malpas, including cars, delivery vehicles and buses. The slipway at Boscawen Park is used by canoeists and small boat users. Cyclists are not a main user group on this loop.

Enhancing the existing offerings and condition of the park would have economic, social and environmental benefits. This potentially includes better visitor facilities at the park. Greater environmental benefits could also be realised if sensitive erosion control measures are developed that also create new habitats along the shore (without affecting the mudflats).

5.1.3. Loop 3 – Railway Track Bed, A390 and Higher Newham

An overview of Loop 3 is in Figure 21. This is the longest loop and it includes contrasting landscapes and gradients. It has relatively level sections at lower elevations along its southern part, running through undeveloped landscape, and a further relatively level section at higher elevation running along the urban edge. The eastern and western sections assimilate the gradient differences and are steeper in places. It is suitable for cyclists and could be used as a cycle commuter route between the western and city centre parts of Truro (lighting of the southern part of the route through landscape is unlikely to be acceptable however).

The southern railway track bed section is an existing route. It is muddy in places and some antisocial behaviour (such as fly tipping and graffiti) is apparent as well as some rough sleeping. Vegetation is extensively managed, and in places the track feels quite dark with a lack of natural surveillance. It is unlit. A level crossing point with the Old Truro Road exists. There is an existing bridge over the A39, which is in use for the route already. This route joins the A390 after a climb up the hill west of County Hall.

Along the A390, there is no separate cycle way, but the road has wide verges along much of its length and / or there are existing footpaths, suggesting that there may be an opportunity to create a continuous new cycle way. Encouraging cycling on the actual A390 road surface is not recommended.

The route then crosses into the Higher Newham site near the roundabout between the A390 and A39 – this will require further detailed investigation and is the most challenging crossing point on this route. It runs through the Higher Newham development, currently shown along cycle route alignments proposed as part of the development. There is also a link south to the Sustrans Route 3 (which forms part of the Loop 3 southern section).

The link back onto Newham Road requires some further investigation – it is currently shown

along Newham Lane as per the approved Higher Newham plans. This is a feasible route, but it is narrow and there is conflicting commercial use, which would not allow the creation of separated pavements. At the end of Newham Lane, it links into loop 1 and Newham Road, follows Newham Road for a short section and then diverts onto the old railway track bed. An alternative connection is proposed south of the quarry – this requires investigation of landownership and surveys, but is considered potentially feasible and would avoid the majority of conflicts between cyclists and commercial traffic.

The main connection of this loop is to loop 1, where it shares the route along Newham Road, and where links are proposed at Lighterage Quay. It also links to loop 5. At the link between loops 1, 5, and 3 at Lighterage Quay, a node is created of a number of routes and the bridge – this creates a beneficial opportunity to improve this whole area and make full use of a new bridge. This node could include Park & Float and visitor facilities, as well as improving the start of loop 3, which is currently a difficult-to-see small path entrance with lack of natural surveillance or CCTV.

Ecological, landscape and heritage constraints are applicable to this loop but are unlikely to be prohibitive as much of it is along existing routes. Lighting should be avoided along the natural sections (railway track bed between Newham Road and County Hall). There is potential for heritage interpretation and education in relation to the railway and its historic function for the harbour and Newham. Views to the south from this loop could be exploited as a positive feature and points of interest in the wider landscape to the south could be included.

This loop is currently under-used and not widely known, so that only keener cyclists appear to use it regularly. The surveillance and anti-social issues along its southern section and the busy road with no dedicated means of cycle access along its northern section prevent it from being used by a wider audience. There is potential to enhance the user profile, particularly in conjunction with the Higher Newham development and Newham Road improvements, through better promotion, some surface enhancement, selected vegetation clearance and possible localised surveillance considerations, and if a cycle lane could be created along the A390.

Social (including health / wellbeing) and environmental benefits would be the main benefits achievable with this loop, through broadening of user profiles, promoting it as a commuter route for cyclists and thereby helping to reduce traffic on the main road system. There could be habitat and landscape improvements along some of the route, as well as educational benefits in terms of heritage and environment.

Figure 21: Overview of Loop 3

5.1.4. Loop 4 – City Centre

An overview of Loop 4 is in Figure 22. The eastern part of this loop is on flatter ground in the city centre, the western part is on sloping land, so that there are some more challenging aspects to this loop.

Figure 22: Overview of Loop 4

It utilises existing roads, and as such will require cyclists and pedestrians to negotiate the traffic to some degree. For these reasons it is likely to be more attractive to pedestrians and tourists who would like to explore the city in a different way. For regular local users, the connections between this loop and loops 1 and 3 are likely to be of more interest, enabling them to travel from A to B without having to use a car.

Being an urban loop, surfaces are largely hard materials, consisting of cobbles, tarmac, and block paving. There are kerbs and level changes. Signage is widespread and sometimes uncoordinated and confusing (particularly the multitude of A-frame signs in the city centre).

Whilst the mix of pedestrians / cyclists and traffic is a conflict, the urban environment means that users are mutually aware of each other and generally work around each other. This however does not prevent all accidents as is shown in the data associated with the non-motorised user study in the appendices.

This loop does not share route sections with other loops; it instead connects to them through links. It could be a key element for tourists wanting to explore the city and wanting to go on to explore other Loops. The city loop would be a good place for cycle hire to enable this to happen. There is huge educational and social potential in this loop, and this could have economic spin-off through increased spend.

Ecological and landscape constraints are unlikely to be important for this loop. Heritage constraints will play a role. Signage and interpretation would be a key part of this loop.

5.1.5. Loop 5 – South Newham and Calenick Creek

An overview of Loop 5 is in Figure 23. This is a short loop at the southern end of Newham, but it could be very important for creating a new destination here, helping to justify improvements to Newham Road elsewhere and allowing this part of Truro to be experienced by a wider audience, alongside controlling anti-social behaviour. Newham Road currently ends in a dead end with a turning circle, with waste land behind. The Rhoda Mary Heritage Shipyard is at this end, but is not yet widely known. There is scope to create synergies between loop 5 and the Rhoda Mary project.

The South West Water (SWW) Sewage Works are located at this southern end of Newham, and anecdotal evidence suggests occasional issues with odours, although this apparently has improved over the years. SWW would be a key stakeholder for this loop.

There is no existing path around the southern headland. This is one of the few sections of the Truro Loops, where creation of a new path would be required. This will have to be explored in detail as one of the projects defined as a result of the Truro Loops proposals. It appears that much of the land that would be required for this section is within Cornwall Council ownership. The new path would have some level changes, but could be designed to be easily navigable, and it is envisaged that it would largely run along the lower elevations on the slopes above the shore. It would connect to loop 3, where a ramp is likely to be required to bring the path up from the lower levels along the river.

Land associated with this loop is at present waste land or inaccessible woodland. There are signs of anti-social behaviour such as car racing and fly tipping. Businesses in Newham have issues with crime, particularly along this southern part of Newham. Loop 5 could help to adjust the user audience and make this an area that could become a new hidden gem for city users, like Boscawen Park is on the other side of the river.

The AONB and the SAC and SSSI designations are to the south and will require consideration in any proposals. Lighting is unlikely to be possible due to the ecology and

landscape constraints. Heritage constraints do not appear to carry great weight for this loop, although the Calenick medieval quay and lime kiln are near the Rhoda Mary area.

Figure 23: Overview of Loop 5

There were previous proposals from Newham BID for a local nature reserve and small park with access similar to that now proposed for the loops (see Volume 5, AppV5-01). This project could be revisited in conjunction with Truro Loops.

Social benefits could be expected in terms of creating a new user audience and helping to promote the Rhoda Mary. Economic benefits would include potential reduction in crime and anti-social behaviour issues, and promotion of local businesses along Newham Road to users of a potential new path and green space. Environmental benefits could include habitat creation and better opportunities to appreciate the southern river environment.

5.1.6. Loop 6 – Malpas and Moresk Forest

An overview of Loop 6 is in Figure 24. This loop has the greatest level changes out of all loops, rising from nearly sea level to 76m AOD north of Malpas. It is a combination of road and landscape sections, incorporating Malpas Road, a track that is a public right of way from opposite Boscawen Park to Park Farm and a new section through land associated with the Moresk Forest project from Park Farm to Malpas.

The Malpas Road sections are currently tarmac surface, but are often very narrow and on bends, so that the potential for conflict between motorised and non-motorised users increases. There is an informal footpath along the estuary from Sunny Corner to Malpas – it could be investigated how this could be improved to encourage use by pedestrians (rather than walking on the road).

Malpas is a small village at the southern tip of the river valley. It has a small harbour and slipway, amenities including public toilets and a pub, and features great views out over the southern river landscape.

The section through Park Farm and the Moresk Forest project is partially on existing tracks, but also includes a new section of path that correlates with current proposals of the owner of the land. This will require formalising and detail design to make it suitable for bicycles, and a ramp will be required at the southeastern corner to connect to the public footpath below.

Whilst there are conflicting uses along the road sections of this loop, those over the tracks and fields are not seen as having much conflict potential. However, there are other users such as local residents on part of the tracks, and the mix of horse riders, dog walkers, walkers and cyclists may have to be managed to some extent, or at least considered in more detail to take this loop forward.

The loop shares some road sections with loop 2 and has potential for connectivity to the St Clement and Tresillian areas and beyond.

There are ecological, landscape and heritage constraints associated with this loop, including adjacent designated sites (SAC, SSSI, and CWS), local archaeological and heritage finds, and habitats and hedges on the fields. These will have to be considered in detail for any options.

Figure 24: Overview of Loop 6

Whilst the Malpas Road and Malpas are well known and busy, the agricultural hinterland and the Moresk Forest project (private landowner creating a new wooded landscape and granting access to some of his land to the public) are less well known. There is scope here to create a new experience for local residents and visitors alike to have more opportunities to experience this rural landscape. Truro Loops could help to raise awareness of the Moresk Forest project and assist in obtaining coordinated funding to maintain and progress the woodland creation.

There may be options to explore how to improve the local road situation related to often

busy use in Malpas. It may be possible to increase footfall to local businesses or create some new catering or outdoor leisure business opportunities as a result of improvements arising from Truro Loops.

5.2. Key Considerations for Bridges

Key ecology constraints associated with the bridge locations are the designated sites (notably SAC and SSSI), the intertidal habitats and wintering birds. An initial overview ecology survey of the loops area was undertaken and is included in the appendices. Further detailed surveys including intertidal surveys are likely be required for the bridge locations if taken forward. Consents from Natural England are also likely to be required.

Landscape constraints for the bridges are considered to arise mainly in visual terms and will include views from the AONB (for Lighterage Quay Bridge) and adjacent users (both bridges, and including residents at Garras Wharf Bridge), as well as views along the river.

Detailed utility searches, ground investigations, topographical and bathymetry surveys and possibly contamination assessments would be required for the bridge project areas – these are all key factors that will have a bearing on final detail design, exact location, technical solutions and costs.

The Environment Agency has advised that new bridge proposals near the Newham flood gates would require a Flood Risk Activity Permit from them.

5.2.1. Specific Lighterage Quay Bridge Considerations

Discussions held with the Harbour Master during a site visit on 26 October 2017 assisted in identifying the preferred location for the bridge. Prior to the visit the initial study had reviewed the possibility of siting the bridge to the north or south of the tidal gate. The discussions with the Harbour Master highlighted that Lighterage Quay is still used by shipping and that the river to the south of the tidal gate is used by them to turn. This has ruled out a bridge to the south of the tidal gate.

Discussions were also held with the Environment Agency over the possibility of using the existing tidal gate to provide support to the new bridge. Whilst this may be an option it would cause difficulties with future maintenance of the bridge as access from the tidal gate would be required. A fully independent bridge structure is preferred.

The likely presence of contaminated land will influence the foundation arrangement. Even if the underlying strata could support a spread type foundation this is unlikely to be cost effective due to the volume of contaminated material that will need to be excavated. A

piled foundation for both opening and fixed spans is preferred using either driven concrete or steel piles which displace limited volumes of material. This will depend on the depth and strength of the underlying mudstone, which may be too strong for driven piles. Bored piles may be required which will require some removal of contaminated material. It is anticipated that scour protection to all piers and the masts will be required to ensure that the foundations remain stable under a design fluvial event.

The consultation with the Harbour Master indicated that the bridge will only need to be open two hours either side of high tide. Outside these times then there is insufficient draft for craft to travel up the Truro River.

Further discussions will need to be undertaken regarding the operation of the bridge. The bridge will not be staffed and therefore all operations will either need to be undertaken remotely from the Harbour Master's office or by the river users themselves. Alternatively, the bridge could remain permanently open for two hours either side of high tide and these times could be published locally.

A mean high-water springs (MHWS) level of +2.4m AOD has been established from the EA drawings for Lighterage Quay. Therefore the soffit level of the bridge will be set at +2.7m AOD to provide a minimum 300mm freeboard above MHWS. As the existing ground levels on either bank are approximately +3.0m, some local re-grading may be required to provide a ramp onto the bridge, given that the structural depth could be 700mm to 1000mm.

A preliminary flood risk assessment has been undertaken which has established a +4.2m AOD flood level, based on a 200 year storm event and an allowance for climate change. Given that this flood level would result in significant flooding in the area it is not proposed to provide a bridge soffit level to accommodate this. Raising the bridge nearly 2m would significantly increase the capital cost, would affect access to businesses on Lighterage Quay and would significantly increase the visual intrusion.

A clearance envelope of 23m will be required above MHWS. This is a requirement of the Harbourmaster and is to allow for the passage of yachts.

5.2.2. Specific Garras Wharf Bridge Considerations

Similar constraints exist with the Northern Bridge. To allow river traffic to access the existing quay adjacent to the Harbour Master's office a bridge with an opening span across the channel will be required.

From discussions on site it appears that the river bed material may be contaminated from historical industrial land use. Such contamination will have an impact on the bridge

foundation arrangement as excavation of contaminated material should be minimised.

Some information on utilities was available, see Volume 3, AppV3-06. During the site meeting the presence of a large diameter foul sewer on the west bank was discussed, but no alignment or location detail is available. The arrangement of the bridge foundations would need to be adjusted to ensure that diversion of this sewer was not required. However, no evidence of a large diameter foul sewer was noted on the available utility information.

During the consultation a desire to avoid significant vertical elements for the northern bridge was expressed. Further design development work will be required on this option. The drawings included in this feasibility study show the structure hinged on the Tesco side of the bridge, which should help to minimise interference with views in the lifting bridge design option.

As with the Northern Bridge a MHWS level of +2.4m AOD has been established from the EA drawings for Lighterage Quay. Therefore the soffit level of the bridge will be set at +2.7m AOD to provide a minimum 300mm freeboard above MHWS. As the existing ground levels on either bank are also approximately +3.0m, some local re-grading may be required to provide a ramp onto the bridge, given that the structural depth could be 700mm to 1000mm. These levels will need to be confirmed when a detailed topographical survey is available.

A clearance envelope of 23m will be required above MHWS. This is a requirement of the Harbourmaster and is to allow for the passage of yachts.

5.3. Key Considerations for Visitor Facilities

Full details for this are included in the Visitor Centre Option Study appended to this report. Key considerations are:

- Location in relation to function. The visitor facilities option study has identified a range of potential locations for the provision of visitor related functions and facilities.
- Access plays a part in the best location for facilities. Without new bridges the city locations are preferred as they require less infrastructure. Once the Lighterage Quay Bridge is in place Boscawen Park becomes as far more favourable location for the provision of outlying services.
- Indicative potential areas required for services have been considered and these will need to be developed as potential schemes are developed.

5.4. Dredging Considerations

Dredging of the river has been raised by a number of parties including the public and local businesses. There have been suggestions to create a scenario by which there is permanent water in the river basin between the flood gates and Morlaix Avenue. There have also been suggestions by members of the public that the river has silted up more in recent years. However, data relating to this issue could not be sourced to support this or show the amount of silting up. It is acknowledged however that there are issues with silting up in some locations, including the ferry turning area at Town Quay, at Boscawen slipway and also further south, where large ships turn that collect metal from the scrapyard at Lighterage Quay.

The Harbour Master has advised that the river channel largely maintains itself through the amount of flow going through it. This assertion seems to be corroborated by historic maps from over 100 years ago, which appear to show the river channel in a similar position and approx. size to where it is today. The current Harbour Dredging Protocol and current Business Plan are available at the Port of Truro website http://www.portoftruro.co.uk/port-information/.

The mudflats are an internationally and nationally designated habitat as detailed in the ecology survey in the appendices.

The Environment Agency has advised that *"any works below the Mean High Water Spring (MHWS) tide level is likely to require a Marine Licence from the MMO (Marine Management Organisation). If a Marine Licence is applied for and secured, we would not require a Flood Risk Activity permit to be applied for from us. A Flood Risk Activity Permit may however be required for works on the non-tidal watercourses or near any flood defences. We should be consulted for any such works"*.

The idea of having the whole area as permanent water (as raised by a number of members of the public) is not considered a feasible option for the following reasons:

- To achieve this, the flood gates would have to be replaced with a lock that can also act as flood defence – the Environment Agency would not consider this feasible or maintainable and it would be a huge cost, which is not likely to be justifiable simply for amenity reasons.
- The changes in dynamics of the river as a result of such proposals would not be predictable without extensive studies. It is likely to increase issues of silting up and could result in loss of the river channel, as well as other potential changes in tidal flows downstream.

- Such a scenario would lead to a loss of the protected habitats and species and would be contrary to the national and international designations.
- Such a scenario would be out of character with the natural state of this river, which is a tidal river. The historic state of the river would always have been tidal and the existing river channel has been in place for over 100 years at least (looking at historic maps).

Navigational dredging may be an option for localised activities. Navigational dredging is a licensable activity and requires a marine license[ix] from the Marine Management Organisation (MMO). The MMO states:

"Navigational dredging can be divided into two categories:

- *capital dredging is generally undertaken to create or deepen navigational channels, berths or trenches or to remove material unsuitable for the foundation of a construction project. It involves the removal of consolidated sediments*
- *maintenance dredging is undertaken to keep channels, berths and other areas at their designed depths. It involves removing recently accumulated sediments such as mud, sand and gravel. To be classed as maintenance dredging the activity must take place where:*
  - *the level of the seabed to be achieved by the dredging proposed is not lower than it has been at any time during the past 10 years, and*
  - *there is evidence that dredging has previously been undertaken to that level (or lower) during that period".*

There are exemptions[x], where certain dredging activities may not require licensing as follows:

"Section 75 of the Marine and Coastal Access Act 2009 sets out an exemption for dredging or the disposal of dredged material carried out by or on behalf of a harbour authority.

Where the activity relates to dredging, the exemption applies if the dredging is authorised by and carried out in accordance with a Harbour Order or Local Act.

Where the activity also relates to disposal of dredged material, the exemption only applies if the disposal is authorised by and carried out in accordance with a Harbour Order or Local Act and the MMO's additional conditions are met.

The MMO's additional conditions are:

- *the MMO is satisfied you have proven that the sediments are not hazardous*

waste. The properties that determine if waste is hazardous are set out in Annex III to the EU Waste Framework Directive

- *the activity involves the removal of dredged material from transitional and coastal waters and its deposit in to other surface waters*
- *the purpose of the deposit is for:*
- *land reclamation*
- *managing waters and waterways*
- *preventing floods or mitigating floods and droughts …*

The navigational dredging exemption is intended to allow low volume, maintenance dredge activities (with a history of the activity at the site), to be carried out without a licence.

Conditions of this exemption:

- *the dredging activity must have occurred at the site in question and be to a depth previously dredged within the last 10 years*
- *the volume of material to be dredged as a result of the activity does not exceed 500m^3*
- *no more than 1500m^3 of material has been dredged, including the volume to be dredged as a result of the activity proposed, in the previous 12 months.*
- *the activity is not likely to affect the status of the waterbody or prevent the achievement of any environmental objectives listed in the relevant River Basin Management plan*
- *notification is submitted to the MMO*
- *the activity does not cause or is likely to cause obstruction or danger to navigation*
- *the activity must not be likely to have a significant effect on a marine protected area*

Disposal of dredged material to sea is not permitted by this exemption. Disposal of dredged material to sea is a secondary activity and in most cases a licence will be required.

This is covered by Article 18A of the 2013 Exempted Activities Order".

Wider area dredging is unlikely to be feasible due to the associated costs vs limited benefits, and associated licensing and permission processes. It would be unlikely to be permitted

within the given constraints, the history of this river being tidal and the current state being its natural state.

There may be options for localised dredging for navigational purposes – focussed on the Town Quay area, Boscawen slipway and turning area for large ships. It has been suggested by the Harbour Master that it may be feasible to use the dredged material for erosion control for example in front of the eroding western and northern Boscawen Park edges. If designed appropriately, these areas could be used to create new riparian edge habitats, where they are outside the mudflats. Even for localised dredging, costs are significant, and the Harbour Authority will not entertain any spend that is not essential to keeping the river navigable.

Some further information on assessing the potential impacts on marine protected areas, the Maintenance Dredging Protocol, is included in the appendices, setting out a process and the baseline information that should be compiled to assess this. Such an assessment is beyond the scope of this feasibility study.

Table 7: Key Opportunities and Constraints and Gaps of Information / Further Studies

Topic	Key Opportunities	Key Constraints	Gaps of information and recommended further work for future project development
Planning policy	Truro Loops links very well with the overall vision for Cornwall and the principle of sustainable development Cornwall Transport Strategy 2030 could help to facilitate some of Truro Loops aspirations, if Truro Loops can be integrated into future funding rounds	Planning applications required for several projects – associated cost and resource requirements and programme implications	Open Space and Transport Strategy maps referred to in Neighbourhood Plan are not online and could not be sourced. Raising awareness with Cornwall Council Planning Team and Truro City Council about Truro Loops and the interface with planning policy
Landownership	Some land that may be needed for Loop 5 appears to be owned by Cornwall Council, which could help to get that loop delivered Landowner for new section of Loop 6 is supportive of scheme in principle and hopes that the synergy between Truro Loops and Moresk Forest projects may assist in obtaining further funding	Landownership along Malpas and Newham Roads not clear Landownership issues could be a key hurdle for bridges, Malpas and Newham Road proposals Potential for increased cost if land has to be purchased	Landownership searches for all project areas required where works are envisaged to take place Negotiations with landowners, obtaining and formalising agreements
Existing user groups, population and social issues	Many enthusiastic users that would benefit from Truro Loops and therefore provide justification for it Volunteers may be easier to find due to the interest this project can generate Good range of users including ages and abilities, with Truro Loops aiming to increase usability by less able users	Access of some areas currently difficult or not possible for less able users due to poor condition or lack of pavements, levels and circulation barriers Bridges may be controversial for some users, therefore requiring greater design and consultation input	Consultation during planning application stages, and production of photomontages for bridges recommended Schools need to be involved in future stages of some projects with most educational relevance
Existing visitor facilities	Potential need to replace existing TIC in City Hall gives an opportunity to provide a new facility which could provide a greater range of services and include those that are most relevant to Truro Loops such as bike hire opportunities and information.	Budget Availability of suitable land within Cornwall Council (or other appropriate) ownership Planning process	Investigation of options for visitor facility provision at two optimal sites Appropriate site survey and investigation as required by potential schemes Sources of funding and management options for visitor centre
Economy	Diverse economy in Truro Truro Loops likely to generate further business opportunities, for example catering, leisure businesses such	Some uses along Newham are not easily compatible with pedestrian and cycle access and activity	Economic benefits likely to arise, but not quantified as part of this study – it may be useful to allow for some further economic input for key projects to be

Topic	Key Opportunities	Key Constraints	Gaps of information and recommended further work for future project development
	as bike hire and better ferry use, as well as stimulating economy during construction of projects		able to clearly demonstrate job creation / increase in economic activity
River Use and Boat Data	Truro Loops will make Truro River more accessible Potential for new ferry landing point Potential to revive traditions / include Truro River more in city events Relatively low number of boats required to pass bridges and only during a four hour window at high tide	Need to maintain free navigation requires a design of a type of opening bridge Additional mooring spaces and dealing with abandoned boats is outside the scope of the feasibility study	Careful consideration of opening mechanisms for bridges required to ensure safe and reliable operation for boa and bridge users
Transport	Basic existing form of all ground elements Variety of potential Loops Improved cycling infrastructure would benefit all and tie in with wider strategy Relatively few key areas that are currently "unsuitable" to the extent they would be overly difficult to improve	Limited ability to improve Malpas Road highway layout Limited ability to improve Newham Road highway layout due to such factors as HGV movements and protective land/property designations The A390 is a barrier, albeit this effect is being reduced by development fronting or accessed off it How users access the loops, i.e. avoiding generating additional car trips/parking Balancing needs of various road users – amenity versus utility	Forecasting of likely trip attraction of the Loops Investigate inclusion of Loops within future strategic transport plans for Truro
Drainage and flood risk	Land largely draining well towards river	Flooding issues at Boscawen Park Rising predicted water levels in future affecting the tidal Truro River with potential implications on bridge design and levels Proposals adjacent to river will have to flood resilient Erosion along river banks likely to increase	Further investigation of rising sea levels on bridge projects required – may affect required minimum deck height of bridge Projects that include pavements will require individual drainage and flood risk assessments for planning applications
Geology, soils and landform, ground investigation, topographical and bathymetry survey data	Some data was available through Environment Agency (Lighterage Quay ground investigation reports) and from Lidar Data, which enabled judgements for bridge concepts to be made	Only basic information available for feasibility study – more detailed data may result in project revisions, further design input and review Cost implications of obtaining more detailed data	Detailed surveys and data for project areas required, particularly for bridge project – ground investigation, topographical and bathymetry surveys

Topic	Key Opportunities	Key Constraints	Gaps of information and recommended further work for future project development
Contamination	Potential to deal with dredgings as part of erosion control measures along Boscawen Park	No data were available for dredging / mudflat contamination Continued erosion along Boscawen Park may result in leakage of contaminants from previous uses in time	Contamination surveys for bridge, dredging and erosion control projects likely to be required.
Ecology	Improvement of buffers to intertidal habitats Improved management of habitats along the proposed routes Increase awareness of ecological features	Designated Sites (notably SAC & SSSI) Intertidal habitats Wintering Birds Potential for other protected species	Presence/ absence surveys of species groups such as bats, dormice, reptiles, badger and otter, but the need for such surveys cannot be determined until more detail is available on the physical aspects of the proposed project.
Landscape and visual	High quality landscape in Loops area will enable promotion of this to users Opening up better and new views Poor condition areas could be improved, making a big difference to local amenity	AONB to the south Urban and river landscapes present definitive barriers and challenges to development and to making the area more pedestrian and cycle friendly Effect of bridges on local views	Landscape and Visual Impact Assessment likely to be required for bridge project, including photo montages Other projects may require some form of brief landscape and visual assessment to ensure there is mitigation for adverse effects Landscape design for some projects
Heritage	Rich history of Truro and surrounding area with lots of scope for interpretation Harbour history	Effects of proposals on the historic Port of Truro and designations in close proximity to the routes	No detailed archaeological information has been sourced. This may be required for some projects were below ground effects occur. Further research would be beneficial to support interpretation and art strategies

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6. Option Development

This section summarises the options explored for the following key aspects of the scheme, referencing detailed information in Volumes 2, 3 and 4 as required:

- Loops and associated Projects
- Bridges
- Visitor facilities

6.1. The Loops

This section sets out how the loop routes and proposals associated with the loops have emerged from the survey and data analysis alongside public and stakeholder consultation input.

6.1.1. Overall Loops Arrangement

The starting point was the early diagram as shown in Figure 1. This was at early project stages translated onto actual routes on the ground, utilising existing roads and paths as much as possible. It resulted in an overall definition of six loops, with the initial scope version of loops as shown in Figure 25.

The routes were then refined following site survey and data review, and reflecting input received from some stakeholders on the early scoping of routes (namely in relation to steep sections associated with Loop 6 raised by Truro Cycle Group and input from landowner of the Moresk Forest project, input from Simon Murray, Cornwall Council, regarding links to wider areas, refining Loop 1 route and city link to utilise existing pavements, and Loop 3 alignment through Higher Newham following feedback from the developer, and further review of city route following site survey feedback). The current version of the loops alignments reflecting this was shown earlier in this report in Figure 4, a larger version of this figure is included in Appendix 10.3.1.

With transport being a key consideration for all loops, a SWOT analysis for transport issues in the loops area was prepared to aid evaluation, this is included in Table 8.

The overall loops are relatively defined, although detail design and future changes to the baseline may result in some changes. This is likely for Loop 4, for the Loop 3 section through Higher Newham, the Loop 6 section through Moresk Forest and Loop 5. Loop 1 relies on implementation of the two bridges, and in particular the Lighterage Quay Bridge, and will therefore only become a reality if these can be successfully implemented.

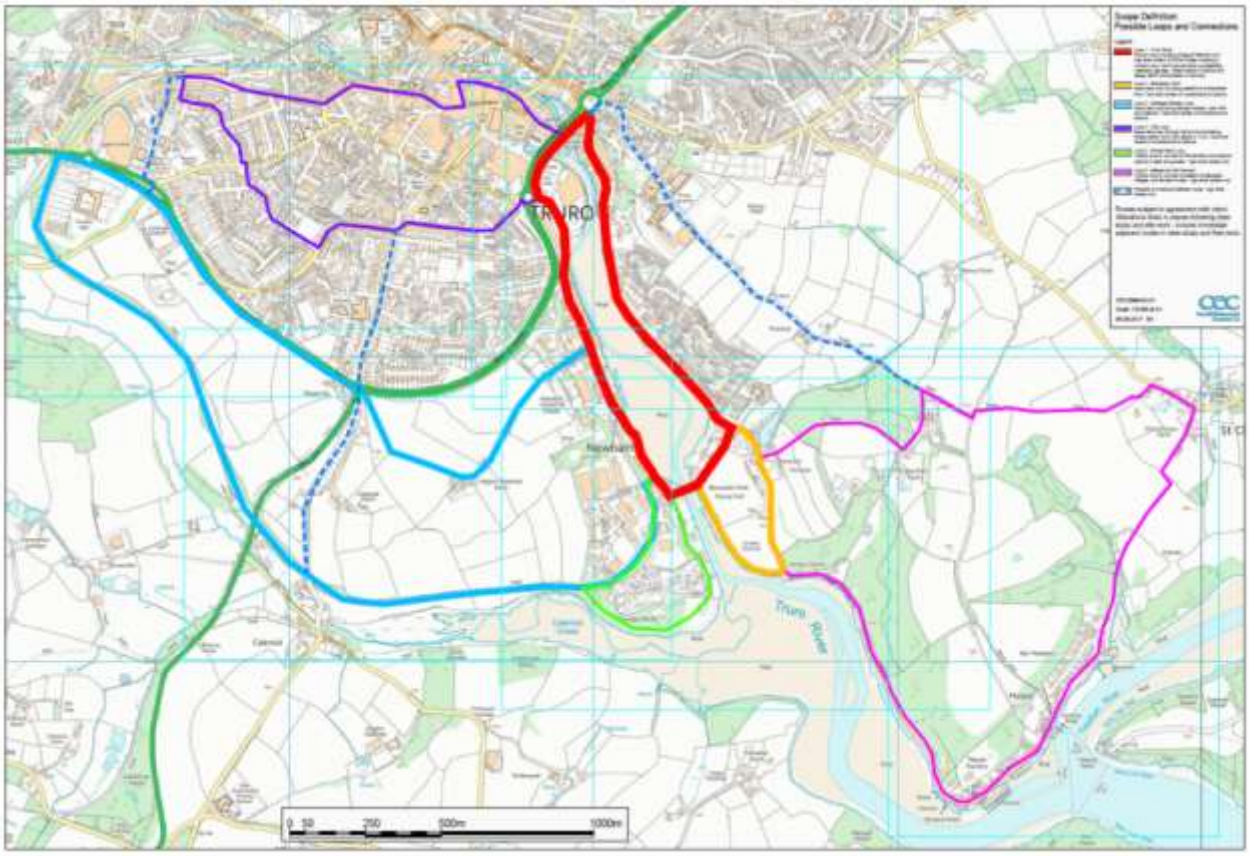

Figure 25: Truro Loops Scope – Draft Routes for Scoping at the Start of the Project

(For current arrangement of loops routes see Figure 4 earlier in this report)

6.1.2. Options for Proposed Projects for Loops

The implementation of the Truro Loops as an overall vision will require implementation of a number of projects to create Truro Loops as an identity as well as a network of routes in and around Truro. In total, 14no feasible projects were identified as detailed in Section 7 of this report, which if implemented over time are considered to achieve the Truro Loops vision becoming a reality.

The definition of projects is based on feedback from the client group TRWG CIC, data and site survey findings, and feedback from the public and stakeholder consultation exercises. Projects for which a range of options have been explored are:

- Bridges as discussed in Section 6.2 below (Loop 1)
- Visitor facilities as discussed in Section 6.3 below (Loops 1, 2, 3 and 4)
- Malpas Road improvements (see below) (Loop 1, linking to Loop 2 and 6)
- Newham Road improvements (see below) (Loop 1, linking to Loop 3 and 5)

- Linking Truro River to the City (see below) (Loop 1, linking to Loop 4)
- Lighterage Quay and Boscawen Park (see below) (Loops 1, 2, 3, 5 and 6)
- A390 route and crossings (see below) (Loop 3, linking to Loop 4)
- High-level review of Loops 4, 5 and 6

Table 8: SWOT Analysis for Transport Issues associated with the Loops

Strengths	Weaknesses	Opportunities	Threats
Basic existing form of all ground elements	Lack of river crossings	Delivery of high quality bridge(s)	Inability to deliver at least one bridge
Variety of potential Loops	A390 Morlaix Avenue is potential barrier	Additional crossing of Morlaix Avenue with a speed reduction will be delivered in the near future	Vehicular traffic continues to increase in Truro
Existing under-passes	Unattractive design/ambience of existing under-passes	Improve the under-passes for all users and raise profile of Loops	Funding of improvements, lack of security
NCN3 Former Railway bed can be integrated as a loop section	Condition	Improvement for both the use as a Loop and the NCN3	Improvements will require on-going maintenance
Potential permeability through Higher Newham and Tolgarrick Farm	Both these developments are bound to the north by the A390	More variety to the Loops	Non-delivery (unlikely), taking Loop users off a segregated route
Historic attraction of City centre Loop	Potentially confusing street layout	Improve wayfinding signage will raise profile of Loops	"Signage clutter" is possibly contentious
Improved cycling infrastructure would benefit all	Cost of infrastructure	Reduce motor traffic, improved health	Lack of adoption
Relatively few key areas that are currently "unsuitable"	Ensuring provision of most effective solutions	Improving key areas working towards regeneration aims	Investing in "wrong" improvements
Strong local support	Unknown position of Local Highway Authority	Progress of future bid funding can be supported by clear local desire to deliver Truro Loops	The Local Highway Authority position may be negative regarding key infrastructure provision. This remains unknown.

Malpas Road Improvements

The following scenarios for improvements to Malpas Road have been explored, with a summary of considerations in Table 9:

- No change

- Minor modifications to signage and footpath repairs
- Localised traffic calming and footpath improvements
- Boardwalk along river side
- New and widened paths that could form a shared pedestrian / cycle route
- Shared surface throughout
- Nodes of shared surfaces with footpath improvements / widening in between

The evaluation has been done splitting Malpas Road in three distinct sections:

- Road section 1 - Trafalgar Roundabout to Malpas House
- Road section 2 – Malpas House to Sunny Corner northern end
- Road section 3 – Sunny Corner to Malpas

The initial evaluation suggests that a combination of various measures is the most likely scenario and that further review during detail design including detailed discussions with the Local Highway Authority will be required to define this.

The matrix in Table 9 suggests that for road section 1 a combination of nodes, footpath improvements and potential widening in places may be the best way forward, particularly if a bridge at Garras Wharf is not forthcoming. If the Garras Wharf Bridge can be implemented, the priority of this is reduced, but local businesses and users coming from the northern and eastern areas of town would still benefit from some localised improvements here. However, the key concern of this feasibility study is connectivity via a new bridge and improving Malpas Road as a leisure asset to the city, so improvements to road section 1 of Malpas Road have not been taken forward as a separate project in this study. It is felt that it would be more appropriate for this to be driven forward by local business users in the area if deemed to be required.

For road section 2 a combination of new and widened paths along the wider verges, some nodes on junctions and the creation of new pocket parks and habitats along with tree planting and new street furniture would be most appropriate.

Road section 3 would most benefit from increased driver awareness, dealing with blind spots and possibly creating a couple of nodes on either end to emphasise the pedestrian and cycle users along this stretch.

Improvements to road sections 2 and 3 are dealt with in more detail in Projects 5 and 14 in Section 7.

Table 9: High Level Option Evaluation Malpas Road

Scoring:

1 – No or minor benefits and/or substantial constraints unlikely to be able to be addressed without major cost or lengthy processes, or very expensive solutions.

2 – Some benefits, some constraints, but overall worth considering. Cost likely to be a factor, but not a show stopper.

3 – Substantial benefits and associated constraints can be addressed, and benefits would outweigh efforts and cost associated with addressing constraints.

Option	Section 1 - Trafalgar roundabout to Malpas House	Score	Section 2 – Malpas House to Sunny Corner	Score	Section 3 – Sunny Corner to Malpas	Score
1. No change	• No improvement. • Potential greater conflict at bridge landing point due to increased pedestrian and cycle flow. • Very difficult for less able users. • No cost and maintenance remains as is.	1	• No improvement • Potential greater conflict at bridge landing point due to increased pedestrian and cycle flow and increased conflict on road towards Boscawen Park due to greater pedestrian and cycle numbers • Very difficult for less able users • No cost and maintenance remains as is. • No change to adjacent protected area.	1	• No improvement • Very difficult for less able users • No cost and maintenance remains as is. • No change to adjacent protected area.	1
2. Minor modifications to signage and footpath repairs and surfacing of unsurfaced sections (no new paths or widening)	• Unlikely to contribute to any improvements in this section.	1	• Some improvements to accessibility for pedestrians if a continuous surfaced footpath can be achieved • Relatively low cost and easier maintenance. • Some improvements for less able pedestrian users. • No change to adjacent protected area.	1.5	• Possibility to explore formalising existing unsurfaced path along river edge. • Possibility to explore lowering the speed limit. • Relatively low cost • May have conflicts with ecology	2
3. Localised traffic calming combined with signage and footpath improvements (may include some sections of new paths)	• This could help at the node with the bridge (southern end of this section) to create a safer situation compared to the options above. • Some cost and highway consent / liaison required. • Footpath improvements along section unlikely to be readily achievable due to space and adjacent uses, although minor alterations may be possible.	1.5	• This could make a notable difference to this stretch due to better pedestrian access, including for less able users, and more awareness of cyclists. • Some cost and highway consent / liaison required. • No change to adjacent protected area.	2	• Considerations similar to above scenario for this stretch.	2
4. Continuous boardwalk along river side	• Boardwalk unlikely to be feasible due to existing buildings, walls, uses / ownership and relatively narrow and steep nature of river. • High cost solution. • Would require tying in with bridge design.	1	• High cost option in highly sensitive area with the potential to obstruct future access to shoreline / river sides for maintenance. Likely to require lengthy design and approval processes. • Would achieve segregation of conflicting uses, but to accommodate bikes and pedestrians without causing further conflicts, would have to be quite wide (min 3m). • Would affect SAC / SSSI.	1	• Not considered feasible or desirable.	1

Option	Section 1 - Trafalgar roundabout to Malpas House	Score	Section 2 – Malpas House to Sunny Corner	Score	Section 3 – Sunny Corner to Malpas	Score
5. New and widened paths that could form a shared pedestrian / cycle route	• Would require narrowing of road and associated measures, liaison and consents. • May be a possibility, but would require detailed further investigation and may not be continuous along whole section. • It could also be investigated if the raised walkway with steps could be modified on either end to form a ramp instead (would require lengthening) – likely to encounter heritage related objections.	2	• Wide verges present along this section that suggest this to be a feasible option that could have major benefits. • Tree root constraints. • Not considered to affect SAC / SSSI, unless widening requires extending into this area (unlikely). • As part of this, creation of pocket parks and habitat creation along the shore line where outside the SAC / SSSI could be considered which would have substantial amenity benefits.	2.5	• Separate shared path for pedestrians / cyclists not likely to be feasible due to space and ecological constraints.	1
6. Shared surface throughout	• Would address footpath issues here and if entrance at Trafalgar roundabout can be addressed, may create a better environment, where pedestrians have priority over cars. • Likely to be difficult to achieve due to amount of stakeholders and need for business access, as well as highway concerns. • Quite costly.	1.5	• Unlikely to be agreeable to highway authority as road is main access road to Malpas. • High cost. • Future maintenance may not be easy to resolve.	1.5	• Highway Authority unlikely to agree to surface change. • No existing footpaths associated with the road. • High cost. • Future maintenance may not be easy to resolve.	1
7. Nodes of shared or slowed surfaces with footpath improvements / widening in between, or where there are no footpaths, consideration of other traffic slowing and integration measures	• Nodes could be located off Trafalgar roundabout entrance and at proposed bridge landing point, with footpath improvements and some narrowing in between, or in combination with modifications to raised walkway if possible. Could have substantial amenity benefits and improve image of area as well as helping to create a gateway to Malpas Road.	2.5	• Nodes would add to the overall benefits of widened and shared paths (discussed previously) through enhancing urban environment and providing points of slowing down. • Costly and may incur highways objections. Will require detailed design and liaison.	2	• Nodes could be included at either end of it and overall improve amenity and add interest, in combination with potential existing path improvements, exploration of speed limit reduction and signage. • Higher cost and potential highway consent issues.	2.5

Newham Road Improvements

The following scenarios have been considered:

- No change
- Consideration of Newham BID and Cormac proposals
- Modifications to signage, upgrades of materials and landscaping improvements
- Boardwalk along river side – at Lighterage Quay only, to front of properties and all the way to Tesco junction

The Cormac feasibility study[xi] for Newham Road has been reviewed in detail for background and to understand what has been explored previously and what constraints were identified then. The Truro Loops feasibility study can benefit from this greater level of detail and could help to finalise these proposals and push forward a solution and funding.

Boardwalk proposals would be heavily constrained by the river environment and limited space, as well as landownership issues. They would also be prohibitively expensive. It was evaluated as part of this study that the most feasible approach to Newham Road improvements would be to review and revitalise the Cormac proposals, revitalise some of the Newham BID projects, and implement modifications to the Lighterage Quay junction. An additional route along the northern old railway track bed (as were shown in the Cormac study) and exploring a longer cantilevered walkway section at the northern half of Newham Road have been included in this project as more ambitious provisions – these could be treated as separate sub-projects.

Initial consultation with the Local Highways Department (see consultation records) indicated that the position adopted regarding non-motorised user improvements along Newham Road is more favourable; however, there are factors outside the control of LHD which have stymied improvements that they had themselves intended to implement. Notwithstanding this, it is probable that some improvement works at the Lighterage Quay/Lighterage Hill crossing point would be considered by LHD in a favourable light. It would be necessary to submit a formal planning application and this would then be subject to a full and proper determination.

As a result, Projects 2, 3 and 6 in section 7 set out details for proposed improvements that are considered feasible within the given context of an operational business and harbour district.

Linking Truro River to the City

This was an important consideration for this Feasibility Study. Options however are very limited if they are to be feasible. The following options were briefly discussed during the study, but were not considered feasible within the overall constraints presented by the existing situation and considering benefits that less elaborate options could deliver:

- Third bridge over Morlaix Avenue – substantial space and cost implications and would require full urban redesign of the area. This was considered too ambitious within the scope of this study.
- Wide level pedestrian crossing over Morlaix Avenue – unlikely to be feasible in consideration of highway constraints and would also require substantial urban re-design of area, also considered too ambitious.
- More substantial alterations to the top end of Malpas Road to create wider pavements – substantial building and landownership constraints. Some modifications may be possible, but unlikely to achieve benefits that would justify the effort. It was decided that he focus of improvements would be better placed on the stretches of Malpas Road that actually are along the river.

The two projects considered more feasible and looked at more closely, where improvements to the existing urban fabric between the city and river areas, and the implementation of a bridge at Garras Wharf to Malpas Road.

The proposed Garras Wharf Bridge would be a key element of improving connectivity between the City and River through providing a more direct pedestrian route to Malpas Road that would avoid the need to walk along Morlaix Avenue, Trafalgar Roundabout and the top northern section of Malpas Road with very narrow pavements.

Some improvements were identified for the two underpasses under Morlaix Avenue and the pedestrian route around the back of Tesco. These improvements are detailed further in Project 4. Garras Wharf Bridge is included in Project 2 in Section 7.

Project 4 also would include a new visitor centre at the southern end of the underpass. This would act to draw attention to the southern side of Morlaix Avenue, channelling activity towards the river and promoting the routes and opportunities available there.

Lighterage Quay and Boscawen Park

Lighterage Quay and Boscawen Park are at a connection point between Loops 1, 2, 3, 5, and 6, therefore giving this area a huge importance for overall delivery of the Truro Loops vision. This includes implementation of the Lighterage Quay Bridge as a node between all

these routes, and a key connection between the east and west sides of the river.

Due to its importance, the area was considered in more detail, and the following options were broadly evaluated:

- Access to bridge - No change
- Access to bridge – cantilevered boardwalk
- Access to bridge – through boat yard
- Use of boat yard as a summer time car park
- Incorporation of a Park & Float facility
- Access to Loop 3 improvements
- Hub with visitor facilities
- Masterplan for Lighterage Quay and Loop 5 area

In terms of access to the potential bridge, it was found that this should be achieved via a boardwalk adjacent to the existing Lighterage Quay access, as part of the Project 2 (for evaluation of actual bridge options see section 6.2 below). This is to avoid conflict with access needs to a working quay, and providing separation between the working areas and bridge access areas. The boardwalk would have to allow for some boat landing facilities and the option to temporarily close it to allow for loading / unloading / harbour operations.

A masterplan for Lighterage Quay should extend to encompass the whole of the area from the quay entrance point to the southern tip and Loop 5. This way it would be able to act as an urban regeneration plan for this part of Newham, keeping the harbour operations and businesses, but also looking at wider economic and social opportunities in this area, and looking at maximising use and arrangements in the quay area. This however is considered a long-term project that would take longer to implement than for example the bridge projects or local modifications. It has therefore been identified as a separate Project 12. In this context, a Park & Float Car Park (Project 3) occupying the current boat storage area is seen as an interim solution and the longer term vision could be for these functions long with the winter boat storage to be located below the southern end of Lighterage Quay. This would give a potentially better interchange between ferry and car park, permit the transfer of the existing ferry bus service from Malpas and release any boat storage activity to be moved to this area, to avoid the congested quay/flood barrier areas of potential conflict and open up new spaces for other uses.

Interim modifications to the local area are outlined in Project 3, including better access to

Loop 3, a safer Lighterage Hill / Newham Road junction and a temporary Park & Float car park. Use of the boat yard as a car park during summer months has the potential to generate income for the upkeep for the site. It would take some pressure off the Boscawen Park side in terms of parking associated with Truro Loops. There is the option to integrate a new ferry stop here (although limited by tide times). This project could be implemented independently from the bridge project, although its attractiveness would be greater if the bridge project was successful. However, access to Loop 3, a temporary car park and a new ferry stop would be attractive in their own right to justify this project, even if the bridge was not implemented. Project 9 dealing with improvements to the southern section of Loop 3 and its connectivity to wider areas southern routes should ideally be pursued in tandem with Project 3, so that cycling from the temporary park & float car park becomes more attractive.

If the bridge project is successful, Boscawen Park facilities would be the logical choice for visitor facilities associated with Truro Loops including potential bike hire. It is envisaged that this would be facilitated through incorporation of these facilities with proposals already under consideration by Truro City Council for Boscawen Park. This is outlined in more detail in Project 7. If the bridge is not implemented, it is likely that initially any visitor facilities on the Lighterage Quay side would be low-key, in the form of a hut open during summer time selling tickets and maps and would have to be associated with Project 3. This could include a bike hire arrangement, whereby pre-ordered bikes are delivered to and picked up from that location to encourage people to explore Loop 3 and southern wider area connections from Truro. A new masterplan for Lighterage Quay could provide more options in the future.

Project 8 is also associated with Boscawen Park. It deals with the erosion issues and dredging of the slipway. Loop 2 relies on the existing Boscawen Park route being available in the future, and this will only be the case if ongoing erosion issues are addressed. Truro Loops can be a much-needed incentive to push this forward and find a solution to these issues.

A390 Route and Crossings

Loop 3 will only become a loop if a new cycle path can be established along the A390 between County Hall and Arch Hill, and if it can be incorporated into the Higher Newham development. The A390 has a wide southern verge or existing paths along much of the section between County Hall and Arch Hill. It is considered broadly feasible that a new continuous cycle route alongside the main road could be established. As the A390 is a key element of the road infrastructure, such an undertaking would require close liaison with the Local Highway Authority and incorporation of a suitable proposal into the Transport Strategy

spending going forward.

Crossing points should be integrated with proposed new junctions established as part of ongoing developments along this corridor.

Initial liaison with developers at Higher Newham have suggested that incorporating the Loop 3 route as part of their already proposed pedestrian and cycle paths in the development should be feasible. Current draft proposals for the Higher Newham development are shown in Figure 26 below.

Figure 26: Illustration of Draft Proposals for Higher Newham

(kindly provided for inclusion in this study by developer Living Villages)

Projects 10 and 11 deal with the A390 and Higher Newham sections of Loop 3. Due to the very different nature of each, they have been identified as two projects, so as to enable their independent implementation. For example, if the route through Higher Newham is implemented, but the A390 route takes longer or can't go forward for unforeseen reasons, the route through Higher Newham would still be a big benefit to overall cycling provisions in Truro and could instead be linked into Loop 4, or a shorter loop around Higher Newham and

Lighterage Quay.

High-level Review of Loops 4, 5 and 6

These loops will require more work to develop detailed solutions, particularly reviewing exact routes and options for Loop 4, establishing a new route to create Loop 5 and working with the owner of land at Moresk Forest to create Loop 6. The routes as shown in this Feasibility Study are broadly feasible. Implementation of Loop 4 will much depend on political will and local support in the City. Loops 5 and 6 will depend on availability of land and support from landowners. These three loops have much potential, but are of lower priority than establishing the projects associated with Loops 1, 2 and 3. It may be that Loop 6 could be completed relatively quickly, if local residents at Malpas take an interest and if funding for creating the route as shown can be sourced. The current plan for Moresk Forest by the landowner is included in Volume 5, and is shown for information in Figure 27.

Figure 27: Illustration of Proposals for Moresk Forest

(kindly provided for inclusion in this study by landowner Colin Parker)

6.2. Bridges

For development of the bridge options a width of 3m has been assumed based on the guidance given in BD29 for combined pedestrian and cycle use, assuming segregation with a white line only. BD29 is the Highways Agency guidance for footbridges.

6.2.1. Option Development

Different forms of opening bridge were reviewed to determine a preferred option for both locations. This included tilt, swing and lifting bascule (including rolling bascule) bridges.

During the consultation a desire to avoid significant vertical elements for the Garras Wharf Bridge was expressed by adjacent local residents. This concern can be addressed further during detailed future design, and as the bridges will have to go through the planning application process, there would be plenty of opportunity for local people to comment on future proposals. A planning application is also likely to include photomontages; production of such visualisations was outside the scope of this feasibility study.

It was queried during consultation why the Garras Wharf Bridge was not located further north. Whilst this was looked at, locating a bridge further north was not considered a viable option due to existing uses, available space and landownership constraints. A location further north would require a landing point adjacent to existing businesses and car parks, with pedestrian and cycle flows directed through car park environments. Large sections are sterilised by building facades. On the Tesco side, space becomes more limited the further north a location is considered. Any location north of the point shown as the preferred option in this study would also partially lose the benefit of pedestrians and cyclists being able to avoid using the northern end of Malpas Road. It would also entail associated works along this part of Malpas Road, which would also be severely constrained by space, landownership, other uses and heritage considerations.

Equally, locations further south for the Garras Wharf Bridge were looked into. The more south the location is, the more it encroaches into the SSSI / SAC, and would require greater spans, substantially increasing cost. The current location avoids the structure being within the SSSI / SAC; it is located just to the north of the boundary of these national and international designated areas.

For the Lighterage Quay Bridge, a location further north would mean a substantially longer span and potential greater interference with the slip way. A location to the south of the flood gates was not deemed feasible following discussions with the harbour master and Environment Agency due to the continued commercial use of Lighterage Quay.

For short opening spans tilt bridges limit the headroom available as the whole structure rotates about a longitudinal axis. This could prove problematic for yachts at Newham or the Northern Bridge, which would need to pass under the bridge at high tide. Not only would a tilt bridge be visually intrusive, both the capital and maintenance costs are likely to be higher than other options. Tilt bridge images below illustrate the potential issues with this option.

Figure 28: Illustration of a tilt bridge in a lowered state

(Gateshead Millennium Bridge, photograph by Hewson Engineering)

Figure 29: Illustration of an open tilt bridge

(Gateshead Millennium Bridge, photograph by Hewson Engineering)

Swing bridges have been used in similar locations as the Truro Bridges. Visually they can be designed to be the least intrusive as they do not necessarily require significant vertical structure to rotate the deck. Instead the structure rotates around a vertical axis.

By its nature a swing bridge will require clearance around it to allow the deck to rotate. Whilst this should not pose any issues at the Northern Bridge, at the Newham Bridge this could be problematic due to the proximity to the flood gates.

Potentially a swing bridge option has the possibility to respond to comments raised in the public consultation. Concern was raised regarding the visual intrusion of the central mast shown in the public consultation illustrations.

A lifting bascule bridge would be a visually attractive arrangement for the two bridges. Whilst bascule bridges are often associated with heavy industrial crossings they are used for short spans. On the continent the Dutch style lifting bridge is a short span bascule bridge.

Figure 32 and Figure 33 illustrate a bascule lifting bridge for the Lighterage Quay Bridge, with the form of the bridge designed to reflect the nautical nature of the setting. As can be seen from the figures the options of locating the hinge point on either the Lighterage Quay or Boscawen Park sides exist. Access to existing power is likely to be easier with the hinge on the Lighterage Quay side, although there is a concern that it may disrupt the boatyard activities. This disruption would not occur if the hinging point was on the Boscawen Park side but some utility work may be required to get power to the bridge location. Both options would require a length of fixed structure, adjacent to the tidal gate on the west, and an opening span parallel to the tidal gate opening.

Figure 30: Illustration of a lifting bascule option with mast at Garras Wharf

(Produced by Yee Associates for Hewson Engineering)

Figure 31: Illustration of a possible swing bridge option with mast at Lighterage Quay

(Produced by Yee Associates for Hewson Engineering)

Figure 32: Illustration of a lifting bascule option hinged from Boscawen Park side

(Produced by Yee Associates for Hewson Engineering)

Figure 33: Illustration of a lifting bascule option hinged from Lighterage Quay side

(Produced by Yee Associates for Hewson Engineering)

For the northern bridge fixed spans would be used on both approaches, with an opening span across the main channel, as illustrated in Figure 34 below. There is no option to have a lifting bridge without some form of lifting structure above. **However, it should be noted that the lifting structure could be located towards the Tesco side of the river channel, thereby removing the presence of a tall structure from the main view particularly from the adjacent apartment blocks.** This would go some way to address concerns raised by residents, and should be explored further during detail design, and with the use of photomontages.

Figure 34: Illustration of a lifting bascule option at Garras Wharf

(Produced by Yee Associates for Hewson Engineering)

A comparison matrix of the three bridge styles explored in more detail is on the following page in Table 10.

The options considered have been compared qualitatively as follows:

- Option 1 - Tilt Bridge
- Option 2 - Swing Bridge
- Option 3 - Lifting Bascule Bridge

Due to its high capital and maintenance costs a rolling bascule bridge would not be appropriate in these locations, and that bridge type was excluded from further evaluation.

Table 10: Truro Loops Bridge Option Matrix

EVALUATION MATRIX							
Evaluation Value	OPT 1	OPT 2	OPT 3	Priority Weight	OPT 1	OPT 2	OPT 3
	RANK				SCORE		
Healthy by Design and Safety by Design	1	3	3	1.2	1.2	3.6	3.6
Aesthetic & Visual Impact	1	2	3	1.0	1.0	2.0	3.0
Construction Efficiency & Value for Money	1	2	3	1.0	1.0	2.0	3.0
Operational Effeciency	1	3	2	0.8	0.8	2.4	1.6
Sustainable Design	1	3	3	1.0	1.0	3.0	3.0
Maintenance & Whole Life Costs	1	3	3	1.0	1.0	3.0	3.0
Total	**6**	**16**	**17**		**6.0**	**16.0**	**17.2**

6.2.2. Preferred Options

The preferred options for both bridges are shown below. Further technical considerations for the bridges can be found in Appendix 10.3.5.

(1) Lighterage Quay Bridge

The preferred option for the connection between Lighterage Quay and Boscawen Park would be a lifting bascule bridge. This would have a total fixed length of 28m and an opening span of 15.5m.

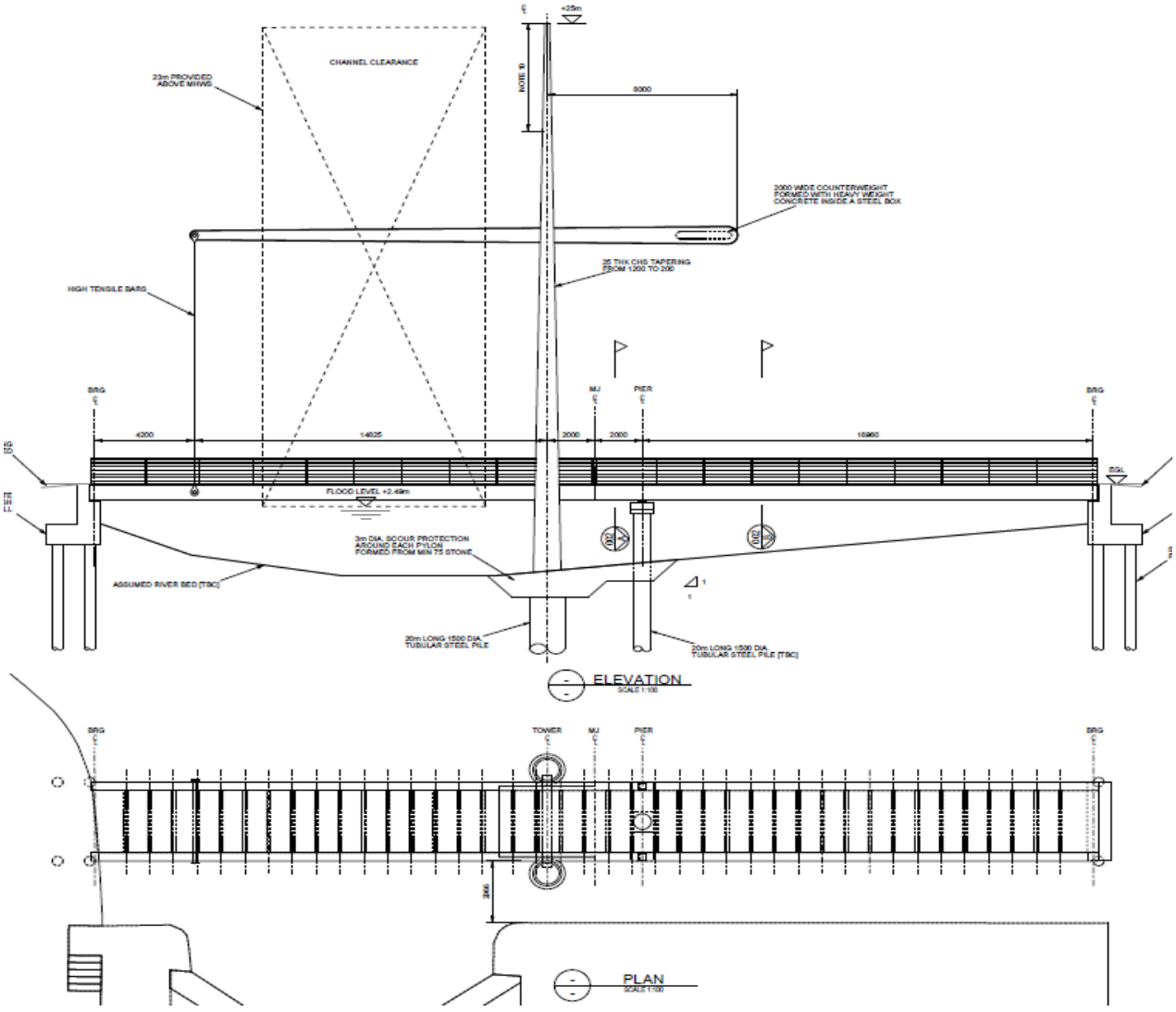

Figure 35: Indicative layout for Lighterage Quay lifting bridge showing required length and spans

(see Volume 1, App10-3-3 for full size drawings)

The bridge would rotate around a hinge located on the Boscawen Park side support. This

would ensure minimal impact on the lifting operations on the boatyard adjacent to Lighterage Quay. This may require some additional utilities work to provide sufficient power to this side of the river.

The bridge would be 3m wide which is sufficient to cater for combined pedestrian and cycle use with segregation with a white line only. The deck would be formed from either steel plate or timber planks spanning transversely, with a 1.4m high steel handrail either side. No provision for lighting of the bridges has currently been made but if required low level lighting could be considered, incorporated into the top rail of the parapets.

A slight (1:40) transverse cross fall is proposed to allow the bridge decks to drain. Longitudinal slots within the deck, adjacent to the longitudinal beam would be used in conjunction with the cross fall to allow water to drain away.

The deck would be supported by steel longitudinal beams which are in turn supported by either driven steel or concrete sheet piles, depending on ground conditions.

At the support for the opening span two steel vertical masts would carry a pair of high level steel upper beams. On one side of the mast these beams would support the deck through high tensile steel cables. On the other side of the mast the beams would be formed into a counter-weight to assist with the lifting of the deck.

(2) Garras Wharf Bridge

As with the Newham Bridge a lifting bascule bridge is the preferred option. The design issues considered for the Newham Bridge are applicable to the Northern Bridge. Fixed spans would be required from both banks (approx. 14.75m from the west and 30m from the east, final spans will depend on exact final location) connecting to a central opening span of 15.5m over the main channel.

The form of the bridge would be the same as the Lighterage Quay Bridge, and the bridge could be hinged on either its east or west side. The drawings included in this feasibility study show it hinged on its west (Tesco) side to ensure the upright elements are furthest away from the residents at Malpas House and least interfere with any views.

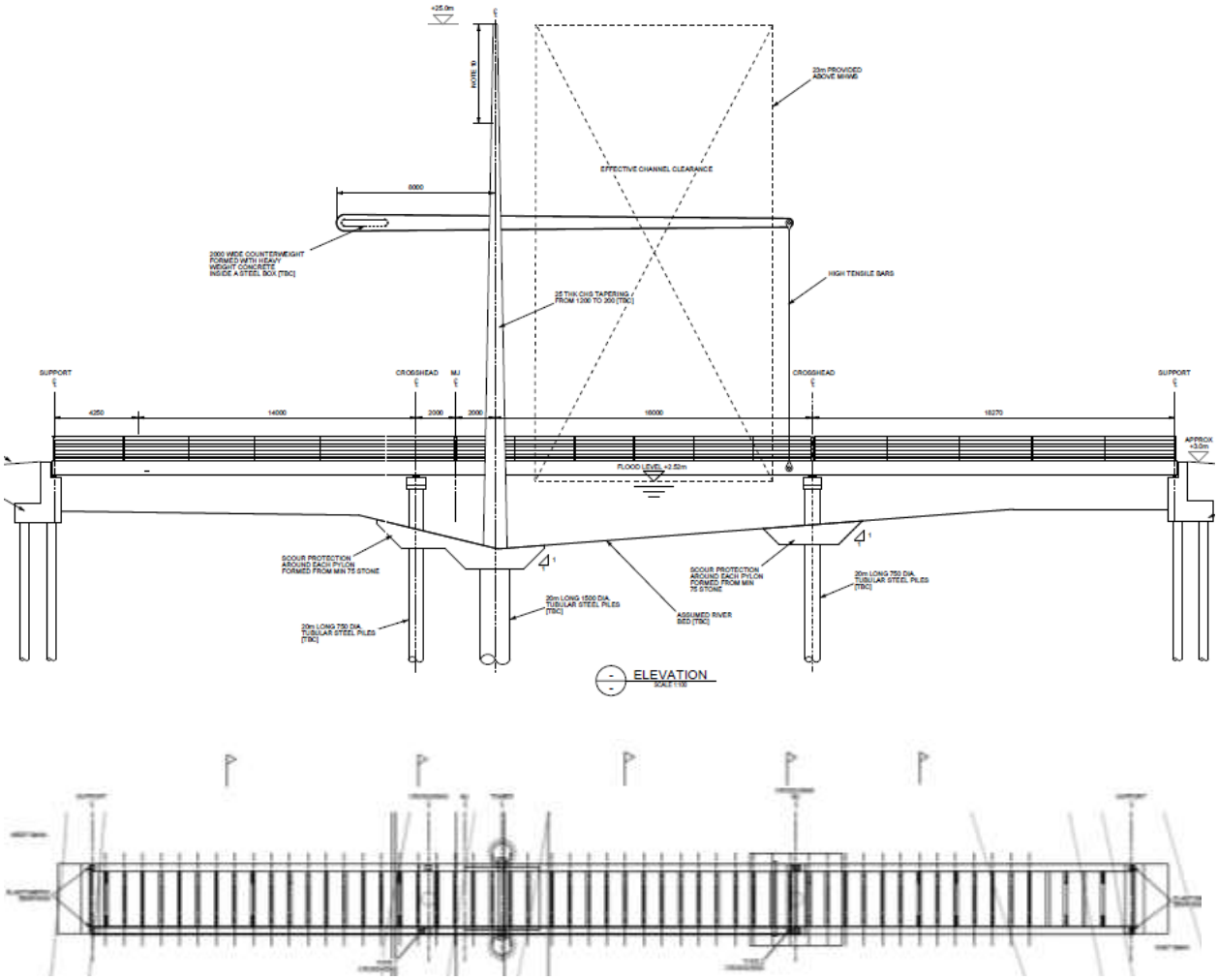

Figure 36: Indicative layout for Garras Wharf lifting bridge showing required length and spans

(see Volume 1, App10-3-3 for full size drawings)

6.3. Visitor Facilities

The full visitor centre option study is included in Volume 2 as separate document to this main report. Below is a summary of findings and a matrix for option evaluation.

The main categories of issues explored as part of the options study were:

- Potential required uses
- Locations
- Space guidance
- Concept for new facility at Lighterage Quay
- Concept for replacement and extension of existing facilities at Boscawen Park

An evaluation of the potential functions and services offered by a visitor centre has identified the following potential elements:

- City Promotion
- Tourist information
- "What's on"
- Visitor guidance and orientation
- Truro Loops Promotion and information
- Heritage Promotion and Interpretation
- Environmental Promotion and Interpretation
- Retail
  - Visitor based retail provisions
  - Broader provisions
- Ticket Sales
  - Transport
  - Tours
  - Entertainment
- Cycle hire (incl. electric) and Buggy Hire

- Cycle Storage Facilities
- Boat Hire
- Catering / refreshments
- Toilet facilities

The visitor facilities option study has identified a range of potential locations for the provision of visitor related functions and facilities. Table 11 summarises the option review and broadly assesses the merits of each location. Locations investigated are listed below and are shown in overview in Figure 37:

- Bus Station Area (A)
- Area west of bus station / south of Cathedral (B)
- Bank - South of Tesco Car Park (C)
- Boscawen Park (D)
- Railway Station (E)
- City Car Parks (F)
- Park and Ride Points Langarth or Tregurra (G)
- Newham (H)
- South Newham / Rhoda Mary (J)
- Site near Harbour Master's Office / Penrose (K)
- Lemon Street Market (L)

If the existing TIC in the Town Hall was to move from its current location, a new visitor centre close to the Bus Station (Area A) would be best placed to provide all of the necessary functions.

Area (B) within the City west of bus station / south of Cathedral and Area (L) Lemon Street Market may also be suitable location options but this would be dependent on a suitable building being available. These locations would be less connected to the loops covered by this feasibility study.

Boscawen Park (D) and Newham (H) both provide good locations for a visitor centre which

focuses on the Loops and the River. With the bridge between the two locations in place then Boscawen Park probably provides a more suitable setting which can build on the site's existing assets.

The other sites considered each have benefits which could be usefully exploited as part of a broader City-wide provision of visitor information services.

Initial thinking on approximate space provisions for the facilities suggest that a new facility that covers most of the uses discussed previously would require space of around 600m^2. Table 12 illustrates how this figure has been arrived at. A more likely scenario is that only some of the uses would be addressed, or that the facilities are integrated with other existing provisions, so that the ultimately required area will be smaller.

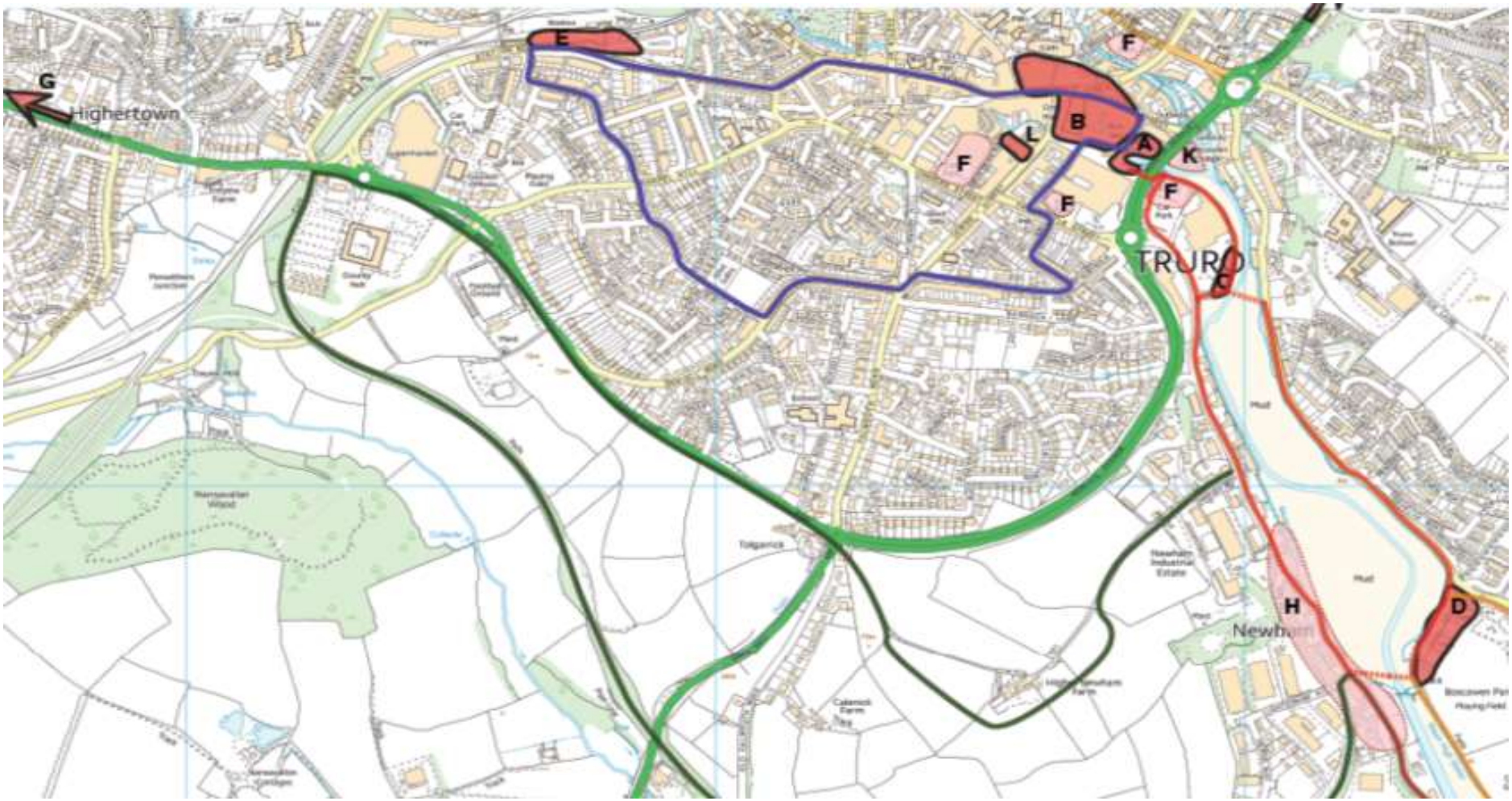

Figure 37: Overview of potential Visitor Facility Locations

Table 11: Truro Loops Visitor Facility Location Review Option Matrix

This table should be read with the Visitor Option Study contained in Volume 2, App V2-05.

Key: Optimum Location | Secondary Location | Less favourable or unsuitable location

Potential Visitor Centre Functions	Location Opportunities											
	Existing TIC (Within B)	Bus Station Area (A)	Area west of bus station / south of Cathedral (B)	Bank - South of Tesco Car Park (C)	Boscawen Park (D)	Railway Station (E)	City Car Parks (F)	Park and Ride Points Langarth or Tregurra (G)	Newham (H)	South Newham / Rhoda Mary (J)	Site near Harbour Masters Office / [illegible]	Lemon Street Market (L)
City Promotion	Existing											
Tourist information	Existing											
"What's on"	Existing											
Visitor guidance and orientation	Existing											
Truro Loops Promotion and information												
Heritage Promotion and Interpretation												
Environmental Promotion and Interpretation												
Retail - Visitor Based	Existing											
Retail - Broad Based												
Ticket Sales - Transport												
Ticket Sales - Tours												
Ticket Sales - Entertainment												
Cycle (incl. electric)and Buggy Hire												
Cycle Storage facilities												
Boat Hire												
Catering / refreshments					Existing	Existing						
Toilet facilities		Existing				Existing						

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Table 12: Truro Loops Visitor Facility Preliminary Area Assessment

Visitor Centre Functions	Typical Area assessment in m^2	Notes
City Promotion	50.00	Bournemouth TIC is 41m^2 providing this functionality
Tourist information		
"What's on"		
Visitor guidance and orientation		
Truro Loops Promotion and information	15.00	Depends on display and whether part of larger provision
Heritage Promotion and Interpretation	15.00	Depends on display and whether part of larger provision
Environmental Promotion and Interpretation	15.00	Depends on display and whether part of larger provision
Retail - Visitor Based	15.00	Depends on range
Retail - Broad Based	50.00	Really could be any floor area depending on operator
Ticket Sales - Transport	Within above?	
Ticket Sales - Tours		
Ticket Sales - Entertainment		
Cycle (incl. electric) and Buggy Hire	200.00	Further input needed, secure storage required but not 'heated' space
Cycle Storage facilities	18.00	1.8 sqm (0.9 x 2.0 m per bike), based on 10 bikes
Boat Hire	15.00	For the office element
Catering / refreshments	60.00	That would be about 30 covers
Toilet facilities	50.00	Area would depend on location and assessment of need
Sub-total uses	***503.00***	
20% allowance for circulation, internal walls, etc.	100.60	
Approx. Total max. area required for feasibility and planning purposes if all uses were to be incorporated	**603.60**	

7. Project Definitions and Indicative Programme

Based on the site survey, desk study, consultation and option evaluation, a series of potential projects can be identified that will frame the overall project structure and enable incremental implementation, identification of funding and resource requirements to ultimately achieve all six loops as defined in this study.

Project summaries in table format to form a brief for each project are included in Appendix 10.3.2 to be considered further by a steering group. Brief descriptions for the projects are below. Basic Concept Plans showing what has been included in the budget cost exercise are included in Appendix 10.3.3. An Outline Cost Plan is included in Appendix 10.3.6. The overall suggested project timeframe to implement the projects outlined in this study is 8 years as detailed further in the indicative programme in section 7.17.

This enables to set aspirations for a steering group to work towards. Going forward, a project list coupled to an outline programme enables monitoring and adjustments to project plans as required depending on changing priorities, funding streams and available resources in the steering group. Some guidance is provided in section 9 as to what might be a possible steering group set up and where funding may be sourced from.

Table 13 provides an overview of the projects identified as part of this study and lists suggested priorities for implementation. Assigning priorities acknowledges that the steering group is not likely to have either sufficient human resources or sufficient funding from the outset to progress all fourteen projects at once. We have used the following priority ratings:

- **Priority 1 – Key Projects** that should be pushed forward from the outset and resources and funding should be concentrated on these initially. These projects are most likely to act as catalysts for further funding and improvements and to raise the profile of Truro Loops, and they would deliver key components of the scheme without which the overall vision would not be achievable.
- **Priority 2 – Potential Quick Win Projects** that could be delivered quicker and easier than some of those in Priority 3 below, and should therefore receive more effort and attention initially to be able to show some implementation and improvements within the first half in the overall programme. This is likely to help generate traction for some of the more complex or third-party projects.
- **Priority 3 – Partner and Long-Term / Complex Projects** that are required to

implement Truro Loops as a vision on the whole, but are likely to take longer to develop. Some elements of these projects could be delivered by partners or third parties, and initial relationship building and negotiation is required to be undertaken by the steering group before these can move forward.

It must also be acknowledged that the implementation of the majority of these projects will require professional support and input. Fundraising to enable this to happen is required to be able to commission consultants and contractors as appropriate, and the budget estimate in Appendix 10.3.6 includes allowances for professional fees. This will also require resource for putting together consultant briefs, tendering and commissioning.

Table 13: Truro Loops Overview of Projects and Suggested Priorities

This table should be read with project information contained **in Appendix 10.3.**

Project Number and Title	Suggested Priority	Reasoning
Project 1 – An Identity for Truro Loops - Interpretation, Signage, Art and Education Strategy	1	Identity and initial promotion paramount to generate traction for the Truro Loops vision.
Project 2 - Bridges and associated Access - Surveys, Consents, Design, Tendering and Implementation	1	Key part of the Truro Loops vision without which Loop 1 will not come to fruition as envisaged.
Project 3 - Temporary Park & Float and Junction with Lighterage Quay and Loop 3 (Loops 1, 3 and 5)	2	Potential quick win with visible improvements on the ground for the junction and Route 3 crossing.
Project 4 - Garras Wharf Access and Link to City including Visitor Facilities (Loop 1)	1	Linking the city and river is key part and will act as catalyser for other projects.
Project 5 – Malpas Road Pedestrian / Cycle Improvements (Loop 1) – Malpas House to Sunny Corner	3	Complex in terms of landownership and highways – envisaged greater resource needs and timeframes.
Project 6 – Newham Road Review of Cormac Study (Loop 1)	3	Complex in terms of landownership and highways as well as Newham BID interests – envisaged greater resource needs and timeframes.
Project 7 – Boscawen Park Visitor Facilities (Loops 1 and 2)	1	Currently being progressed by Boscawen Parks, need to ensure involvement – urgent timeframe.
Project 8 – Boscawen Park River Embankment Improvements and Slipway Dredging (Loop 2)	2	Potential instant long-term improvements to Boscawen Park, prevention of further erosion and relatively few parties involved.
Project 9 – Old Railway Track Bed Improvements and Link to southern Routes	2	Potential quick win with instant benefits for local cyclists, potential for volunteer involvement.
Project 10 – A390 Cycle Route and Crossing at Arch Hill Roundabout	3	Complex in terms of landownership and highways – envisaged greater resource needs and timeframes. Ideally to form part of Cornwall Transport Strategy.
Project 11 – Interface between Loop 3 and Higher Newham Development, Link to Newham	2	Higher Newham developers need to be in support – development in the near future pipeline – could be a quick win if it can be incorporated into Higher Newham overall plans.
Project 12 – A new Destination for Newham - Masterplan for Lighterage Quay and Loop 5	3	Complex in terms of landownership and current uses – envisaged greater resource needs and timeframes.
Project 13 – Experiencing Truro - Creating the City Loop 4	3	Lots of interested parties, many constraints - envisaged greater resource needs and timeframes.
Project 14 – Malpas and Moresk Forest – Creating Loop 6	2	Ongoing existing project at Moresk Forest, which may enable this Project to progress faster, existing established relationship with landowner.

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7.1. Project 1 – An Identity for Truro Loops - Interpretation, Signage, Art and Education Strategy (Suggested Priority 1)

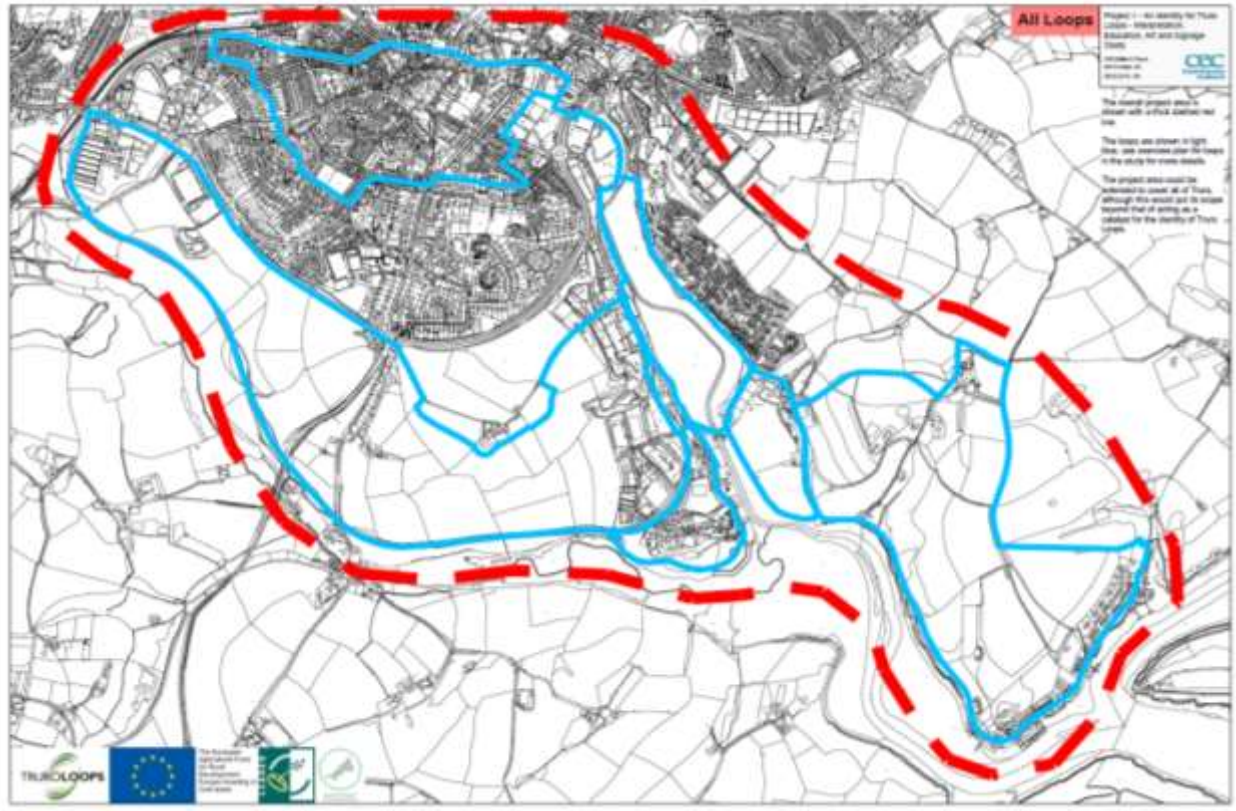

Figure 38: Overview of Area covered by Project 1

(Red dashed line showing project area, blue lines showing loops)

This will be key to the promotion and implementation of the Truro Loops vision to form an identity and provide a unified approach across the project area. It should form a separate key project at the outset, covering the Truro Loops area and potentially looking at linking into wider area projects. The promotion of the routes and the overall project vision will generate increased use and awareness, in turn helping to generate funding and refine projects through further detail review.

As a standalone project, it would have the capacity to alter people's perception towards Truro being a city where walking and cycling can form an integral part of working and living here sustainably. The loops as shown are largely in existence already and promoting these routes could start even if projects listed below take longer to bring to fruition.

It is envisaged that the outcomes of this project would be an identity for Truro Loops in terms of branding and logo, a design guide envisaged to be adopted, up to 5no detailed key projects, and programmes for implementation and maintenance including funding options.

7.2. Project 2 - Bridges and associated Access - Surveys, Consents, Design, Tendering and Funding (Suggested Priority 1)

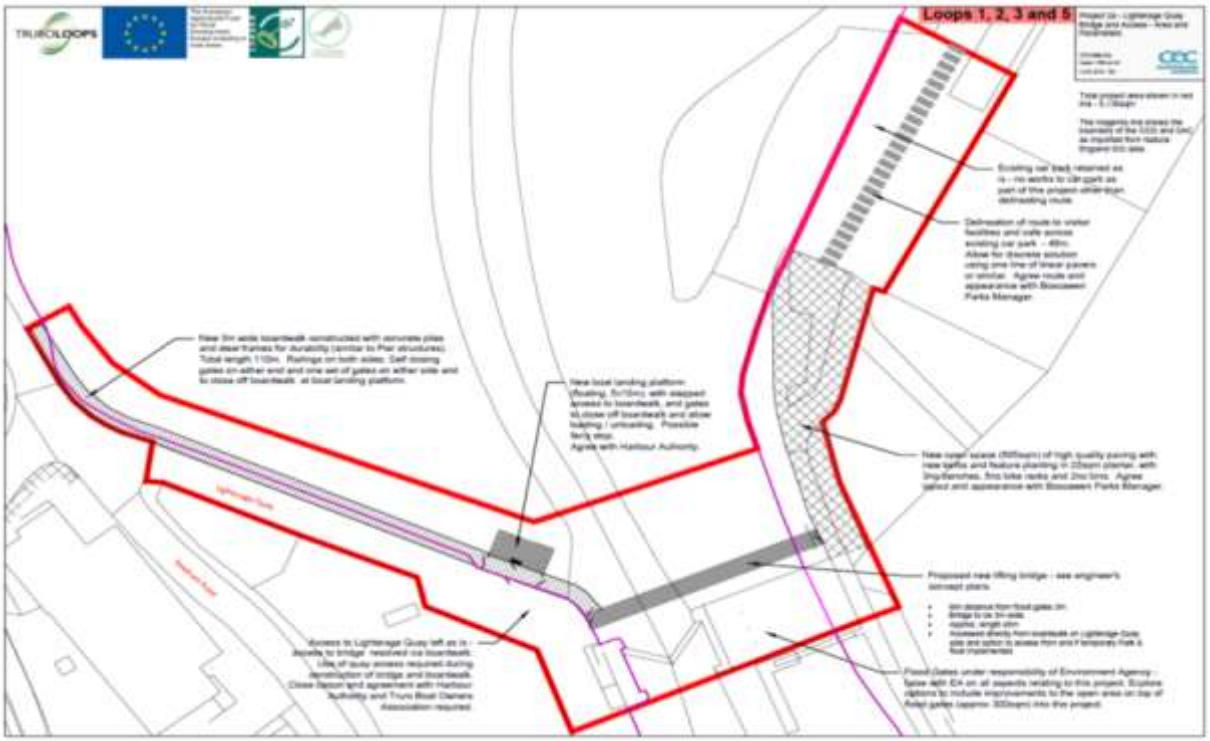

Figure 39: Overview of Area covered by Project 2a

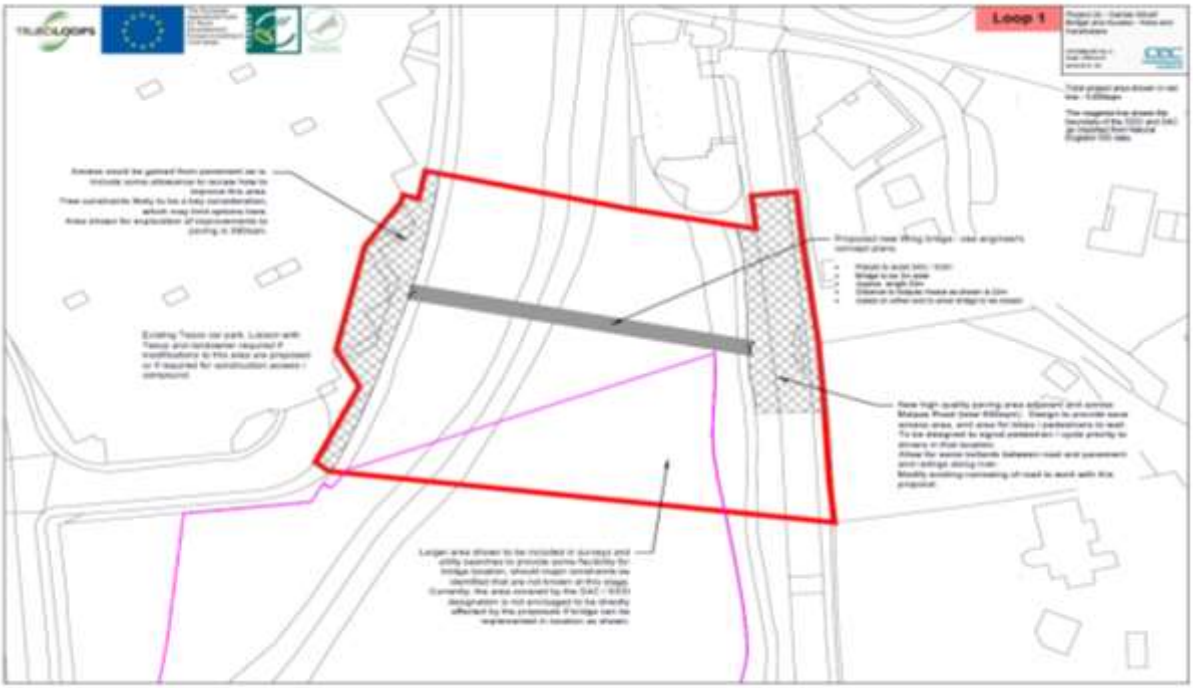

Figure 40: Overview of Area covered by Project 2b

With the bridges being key components of and in many ways catalysers for the overall scheme, the early progression of their design would be key alongside further surveys, consent and licensing applications and detailed stakeholder liaison (particularly MMO, EA, NE, planning application process and associated consultation). Once a design is available, a tendering process and sourcing of funding could run in parallel with application processes. This approach will require initial funding to be secured for the design and application process, before this can be taken further.

Components of this project are:

- Design, Approval and Tendering of Lighterage Quay Bridge including all associated elements including repairs / strengthening of walls, services, foundations, bridge design and materials
- Boardwalk access to Lighterage Quay Bridge along quay access road
- Paved area at Boscawen side of park and connection to the café / visitor centre
- Design, Approval and Tendering of Garras Wharf Bridge including all associated elements including repairs / strengthening of walls, services, foundations, bridge design and materials
- Reconfiguration of Tesco-side paving and access
- New paving area and any required associated structures adjacent to Malpas Road

Consideration has been given to this process being undertaken for each bridge individually or as a joint package. It has been concluded that it would be more effective to deal with further surveys, detail design, and key stakeholder liaison as a combined process, but then submit one planning application per bridge, referring to the context of the other bridge and overall loops as required. This would allow for overall reduced survey, design and liaison fees, but then mean that each bridge is considered on its own merits during the planning process, not preventing one being approved due to issues with the other.

Tendering of the bridge manufacture and implementation and any consent and licensing applications can then be dealt with combined or separately, depending on the overall outcome of the detailed stakeholder liaison and planning application processes, and the type and likelihood of funding available at the time of permissions and consents being in place.

Designing and implementing the bridges will require consideration of access from and to them, therefore involve detailed design and negotiation of any landownership and user issues associated with each individual bridge at the same time. For Lighterage Quay, this will entail looking at the access via the quay and a boardwalk along its edge, as well as a

landing / paving area on the Boscawen side. For Garras Wharf, this will mean considering exact location of landing points on either side, modifying pavements to suit on the Tesco side, and creating a suitably sized paving landing area on the Malpas Road side, that is off road to Malpas Road to ensure pedestrians and cyclists do not walk straight into the traffic on the road.

Project 2a – Floodgates and Boscawen Park edge – bridge would be in front of the floodgates in this view

Project 2b – Looking towards Tesco and Malpas House – bridge would be in the foreground to this view

7.3. Project 3 - Temporary Park & Float and Junction with Lighterage Quay and Loop 3 (Loops 1, 3 and 5) (Suggested Priority 2)

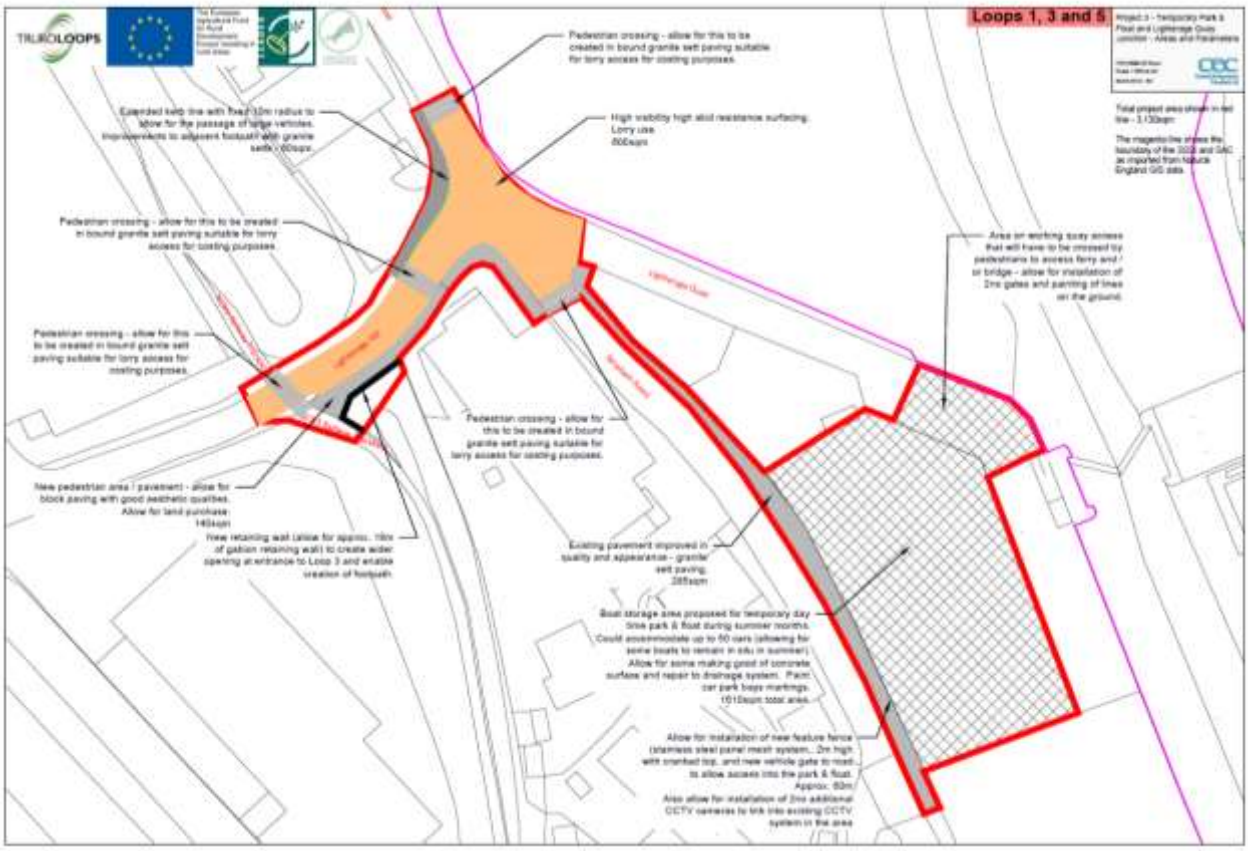

Figure 41: Overview of Area covered by Project 3

Project 2 above can be incorporated on its own to establish the bridge and access to it. This Project 3 is supplementary to the bridge but could also function on its own bringing some benefits that do not rely on the bridge. The description below assumes that this Project 3 will be progressed separately to the Project 2, and that it could achieve some benefits ahead of the implementation of Project 2, which is more complex and likely requires a longer time scale.

Components of Project 3 are:

- Seasonal Park & Float with new ferry landing point
- Connection to Loops 3 and 5 (if Loop 5 can be established, see Project 12)
- Improvements to junction at Lighterage Quay and more obvious promotion of Loop 3
- Potential for ticket booth and low-key tourist information, possible bike hire drop-off

point (the requirement for this may exist until Project 2 is in place)

This project could be a catalyst for a future masterplan for harbour / quay area to comprehensively review uses and create a new destination at this southern end of Truro, assisting regeneration of this area. It will require close liaison with and agreement from the Harbour Authority and Truro Boat Owners Association. Access from Lighterage Quay road will have to be considered carefully.

Project 3 - Lighterage Hill looking towards junction, from Loop 3 / Sustrans route crossing point

Project 3 – Junction proposed for some improvements for pedestrians and cyclists

7.4. Project 4 - Garras Wharf Access and Link to City including Visitor Facilities (Loop 1) (Suggested Priority 1)

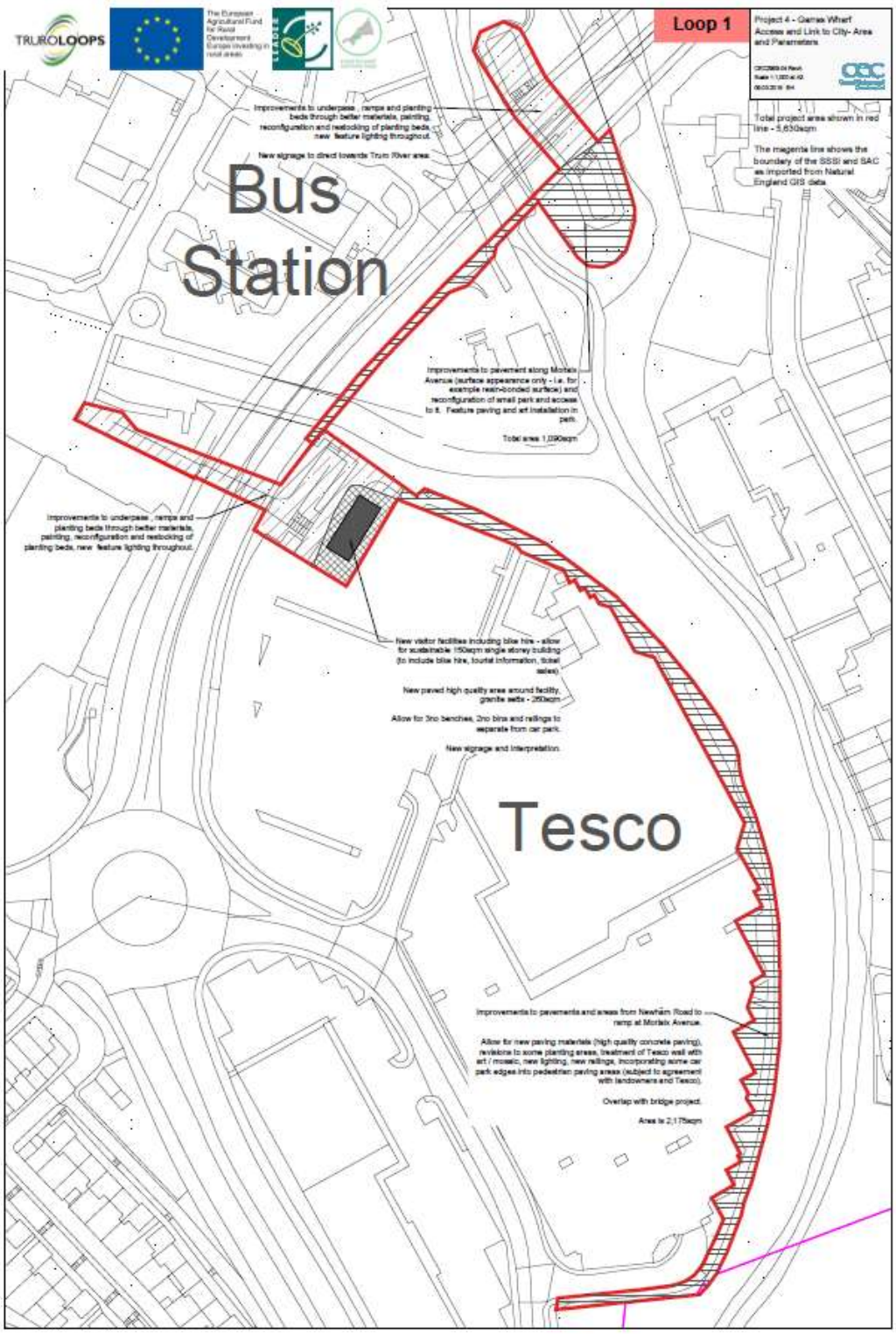

Figure 42: Overview of Area covered by Project 4

As with Project 3, Project 4 is closely linked to the bridge Project 2 but can be implemented on its own with some benefits arising even if the bridge does not happen. This project is essentially about improving the existing pedestrian link from Lemon Quay to Newham, through the underpass, and along the back of Tesco, onto Newham Road.

Components:

- Improvements to materials including paving and railings along full length of link to city and link to Newham Road.
- Improvements to wall, floor and ceiling finishes in existing underpass and along existing ramp and steps, and design of a lighting scheme that is engaging and enhances amenity within the underpass.
- Renew and update planting.
- Art installations, including potentially along the Tesco wall.
- Explore possible widening of path behind Tesco into City.
- Explore creating a new visitor centre on south side of main underpass, which would require some car park, planting and level modifications, but would be a strong point to enhance connectivity. Include tourist information provisions and bike hire facility.
- Improve second underpass into Furniss Island through renovation, materials and lighting and improve connection to main underpass through signage.
- Review and enhance small open space at exit of under-pass on southern side associated with ferry landing.
- Liaise with P&R operator to discuss drop off point at Morlaix Avenue and to potentially enable carrying of bikes on buses.

If the Garras Wharf Bridge is implemented, the importance of this project increases, as it would then also provide linkage to Malpas Road. It does however have importance on its own to enhance the current substantial lack of connectivity between the city and its river area. Some of the measures outlined above could be achieved relatively easily and could form sub-projects to this overall enhancement proposal.

A disability advisor should be involved in this project to ensure any enhanced connections are also suitable for a range of users of varying abilities.

7.5. Project 5 – Malpas Road Pedestrian / Cycle Improvements (Loop 1) – Malpas House to Sunny Corner (Suggested Priority 3)

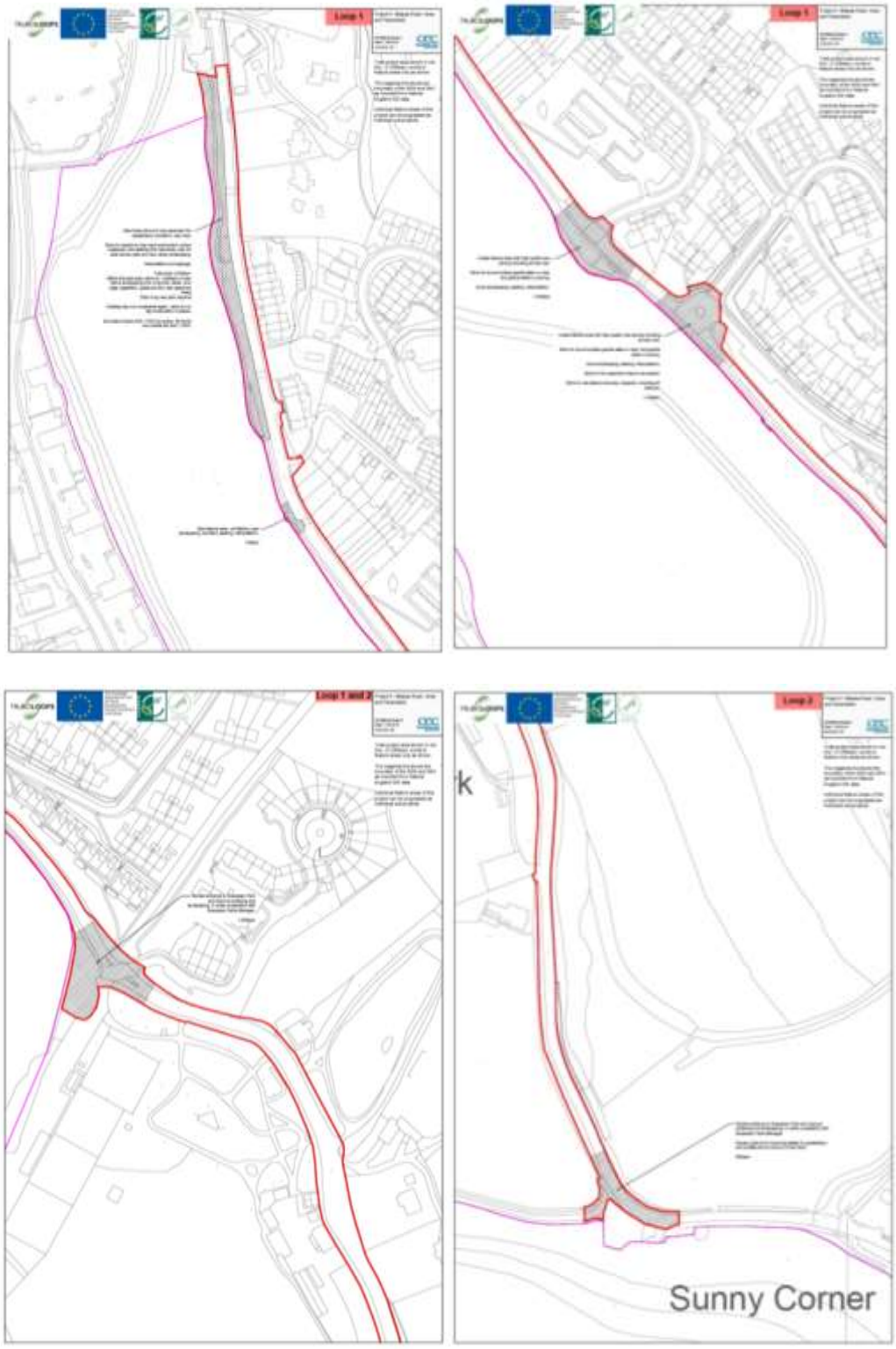

Figure 43: Overview of Area covered by Project 5

Malpas Road forms an essential part of Truro Loops and is a key route from where the Truro River can be experienced; it is however also a complex area. At the moment, the road is not particularly pedestrian or cycle friendly and its straight alignment encourages greater speeds in places. There is a section with no formalised footpath. Project 5 would be essential to enhance the safe use of this road by a wide range of users of varying abilities, including the elderly, disabled and parents with children. The project proposes some modest interventions that would enhance overall amenity, usability and perceived safety, as well as emphasising to car drivers the importance of this route for pedestrians and cyclists. Cyclists would continue to use the road, with pavements reserved for pedestrians.

The project components are:

- Four nodes with different surfacing along Malpas Road at junctions and where Garras Wharf Bridge meets Malpas Road, with the aim to slow down traffic and emphasise pedestrian and cycle friendly uses.
- Widening and improvement of pavements elsewhere, with narrowing of some road sections if appropriate.
- New green corridors with habitat value along edges, where the SAC / SSSI boundary is further out – providing additional seating and resting / viewing areas along the route as appropriate.
- New tree planting where appropriate and highlight landscape areas.
- New signage and high-quality bus stops and lights to improve overall amenity and quality and add interest.
- Incorporation of art features as appropriate.
- Defining a Truro River Area similar in concept to the Quiet Lanes and the Helford Area.
- Reviewing speed limit from Boscawen Park to Malpas and aiming to reduce this to 30mph (currently 60mph).
- Exploring options to formalise the informal path from Sunny Corner to Malpas and make it easier to use for pedestrians, so that they can avoid having to walk on the road.

This project is considered essential to the overall functioning of the Loops, and in particular if the bridges are implemented, as this is very much likely to increase the use of this route by pedestrians and cyclists. It can however also be implemented without the bridges in

place and generate substantial benefits for users of Malpas Road.

A disability advisor should be involved in this project to ensure any enhanced connections are suitable for a wide range of users.

Project 4 – Current condition of link between city and river

Project 5 – Malpas Road with existing footpath and green verge

7.6. Project 6 – Newham Road Review of Cormac Study (Loop 1) (Suggested Priority 3)

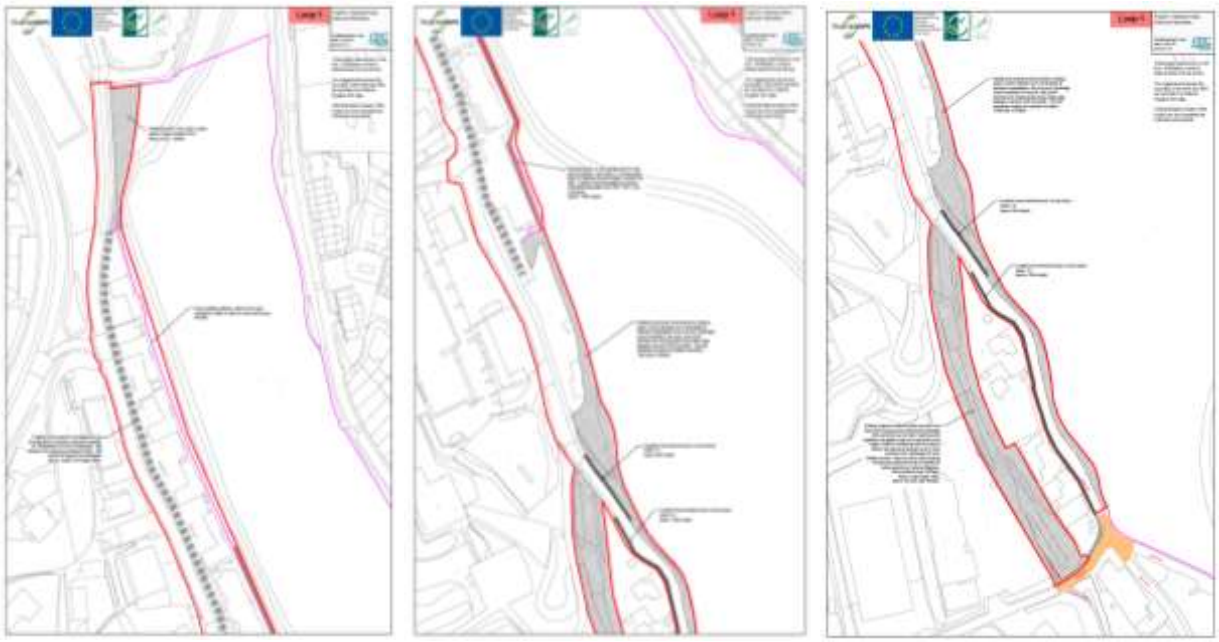

Figure 44: Overview of Area covered by Project 6

This project is about reviving and building on earlier proposals by Newham BID and plans drawn up by Cormac for the road (see separate referenced feasibility study with options and design details). It is understood that this did not move forward due to funding issues. It is considered that use of this study and updating it with close input from Newham BID would be the easiest way forward. It is however a complex project due to the number of parties involved and potential landowner ship and sensitive designatons issues.

In addition, proposals for enhanced landscaping and signage previously proposed by Newham BID could be reviewed and added to this project. Signage has already been addressed by Newham BID in relation to the businesses in the area, there is however an opportunity to include this area in the overall interpretation strategy and use this to create a more exciting destination for non-business users in the area.

Newham BID has also raised the issue of security and surveillance, as there are ongoing issues with theft and break-ins as well as antisocial behaviour in the area. Consideration of these issues should form part of Newham Road improvements.

7.7. Project 7 – Boscawen Park Visitor Facilities (Loops 1 and 2) (Suggested Priority 1)

Figure 45: Overview of Area covered by Project 7

Truro City Council's Parks Manager Richard Budge has met with the feasibility study consultants on site to discuss their plans for the park and give us his views on requirements / options. As a result, it is considered that Truro Loops proposals for access from the bridge into the park and visitor facilities would be best considered as part of the overall Parks proposals. The Truro Loops project would help to raise the profile for the already proposed works and complement them, and potentially this synergy may open up access to some additional funding streams.

There are existing proposals to replace the existing tennis pavilion with new facilities including a larger café area. Feasibility considerations for space needs for a new visitor facility as presented in this study (see Table 12: Truro Loops Visitor Facility Preliminary Area Assessment).

It is assumed that this project would be largely about working with Truro City Council's Parks Manager to incorporate requirements for the Truro Loops visitor facilities with proposals by Truro City Council.

7.8. Project 8 – Boscawen Park River Embankment Improvements and Slipway Dredging (Loop 2) (Suggested Priority 2)

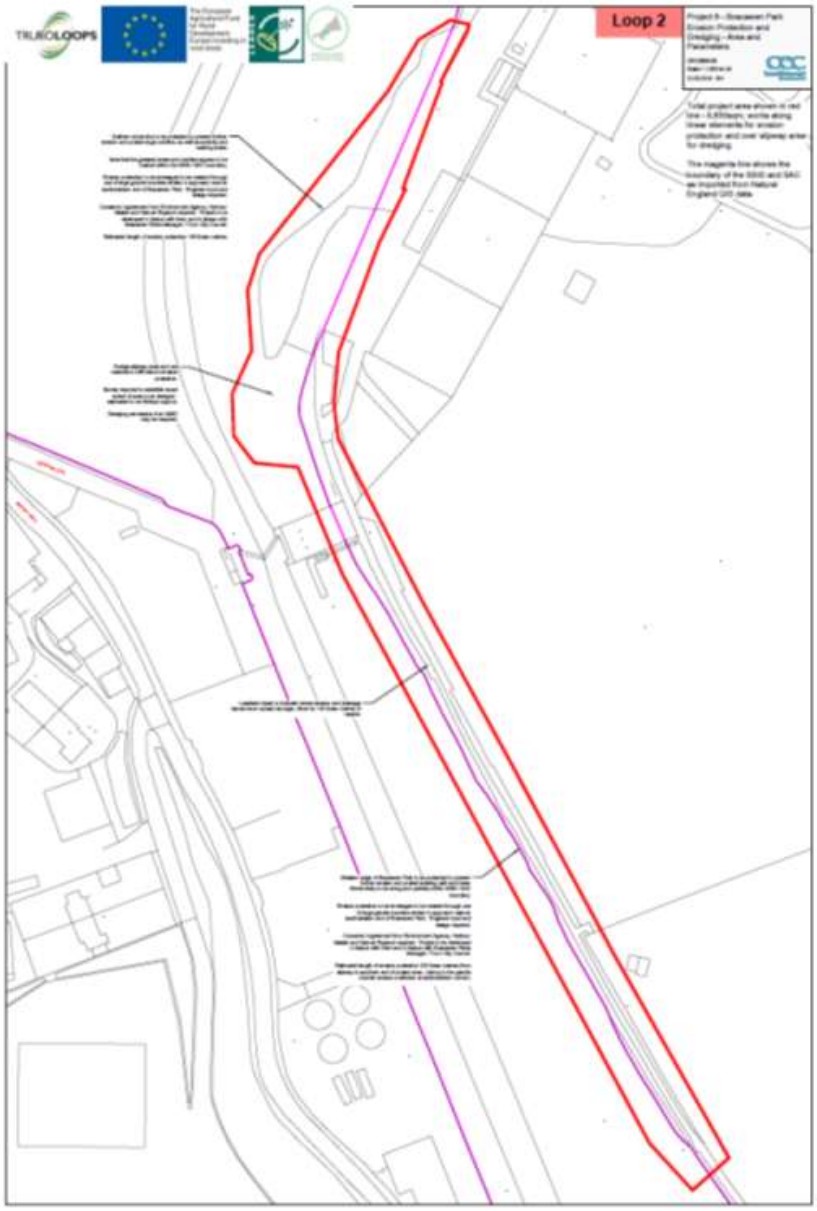

Figure 46: Overview of Area covered by Project 8

This project was defined as a result of discussions with the Harbour Master and Truro City Council Parks Manager. There is an existing section of sea defence wall at the southern end of the park, comprising large granite boulders. This was installed in 2000, but was never carried on all the way around the western and northern parks edge due to lack of funding. It would be envisaged that this approach could be continued to encompass the full western

and northern length of the park boundaries to prevent further erosion. Erosion of the edges is an issue due to the former use of the Park as a dump, creating the danger of pollutants leaking into the river if erosion is left uncontrolled.

The Harbour Master also exploring options of disposing of dredgings as part of an erosion control scheme. It is envisaged that this could be achieved by infilling behind the granite blocks, and that in this way some land on the northern part could also be reclaimed. Further erosion on the northern side will start to affect the conifers in this area in time, which are a landmark and a key feature of this side of the park.

The dredging of the slipway is considered necessary to maintain its usability for boat launch including by the Canoe Club, who are proposing to erect a building on Boscawen Park (planning granted, awaiting funding).

This project is therefore about creating benefits for a range of users and stakeholders, including Boscawen Park managers and users, water users, the Harbour Authority and the Environment Agency, as well as potential for habitat creation through backfilling on previously eroded banks and establishing water edge and / or riparian habitat.

Project 8 – Existing slipway and level of silting up

7.9. Project 9 – Old Railway Track Bed Improvements and Link to southern Routes (Suggested Priority 2)

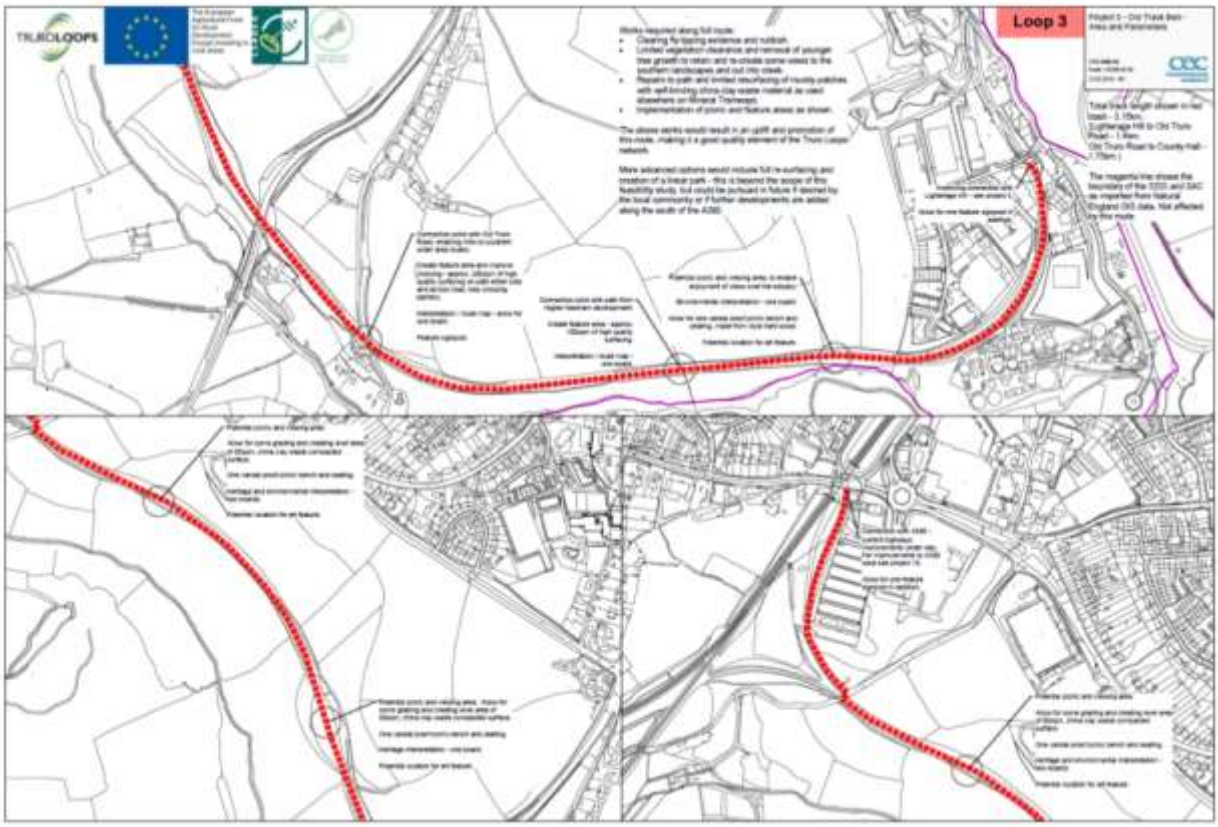

Figure 47: Overview of Area covered by Project 9

This project covers the southern part of Loop 3 between Lighterage Quay and County Hall and how to link it to potential wider southern area routes. Components of this project are:

- Repairing the existing track and improving it along particularly muddy sections using compacted gravel surface and tarmac as appropriate.
- Localised vegetation clearance to allow more light on parts of the route and enhance some views to the wider southern landscapes.
- Clearing of fly-tipped rubbish.
- Create 2no picnic / rest stops including a cycle stand and bench, allowing for a family to stop without obstructing the path.
- Some interpretation allowance – up to 5no panels educating about the railway history and other heritage points of interest and the environment.

- Art installation relating to former railway use.
- Improving crossing point with Old Falmouth Road and making connection opportunities to the south more obvious.
- Clearer signage from County Hall and Lighterage Quay and promoting this as a potential cyclist commuter route between Newham and County Hall / Higher Town.

The connection of this loop with Lighterage Quay is addressed as part of Project 3.

Project 9 – Condition of existing car park for improvement

Project 9 – possible connection point with Loop 5 and glimpsed views into Calenick Creek

7.10. Project 10 – A390 Cycle Route and Crossing at Arch Hill Roundabout (Suggested Priority 3)

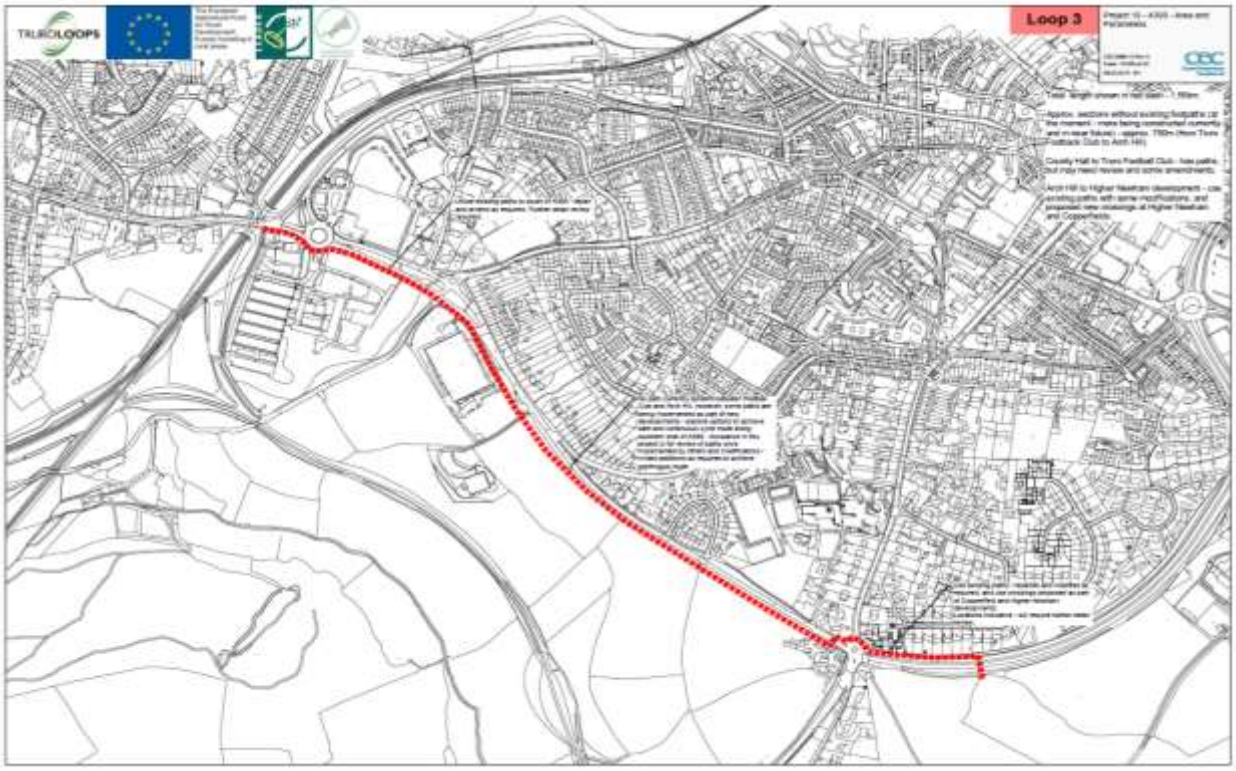

Figure 48: Overview of Area covered by Project 10

This project covers the northern part of Loop 3 from County Hall to Arch Hill roundabout along the A390. Surveys as part of this feasibility study indicate that there are substantial verges in many places along this route as well as existing largely pedestrian paths, so that it may be possible to create a continuous off-road cycle option along this busy route. This would be essential to create a full Loop 3, and would have substantial benefits for commuting cyclists, as well as encouraging use of this route for non-motorised commuting options.

This would only be feasible if agreement with the Cornwall Council Highways Team and adjacent landowners can be reached, and it is recommended that this proposal could be included in the 2030 Cornwall Future Transport Strategy.

A crossing at Arch Hill should be explored as part of this, and is likely to have to be considered as part of wider proposals for changes to this roundabout and crossing point proposals associated with the new developments either side of Arch Hill.

7.11. Project 11 – Interface between Loop 3 and Higher Newham Development, Link to Newham (Suggested Priority 2)

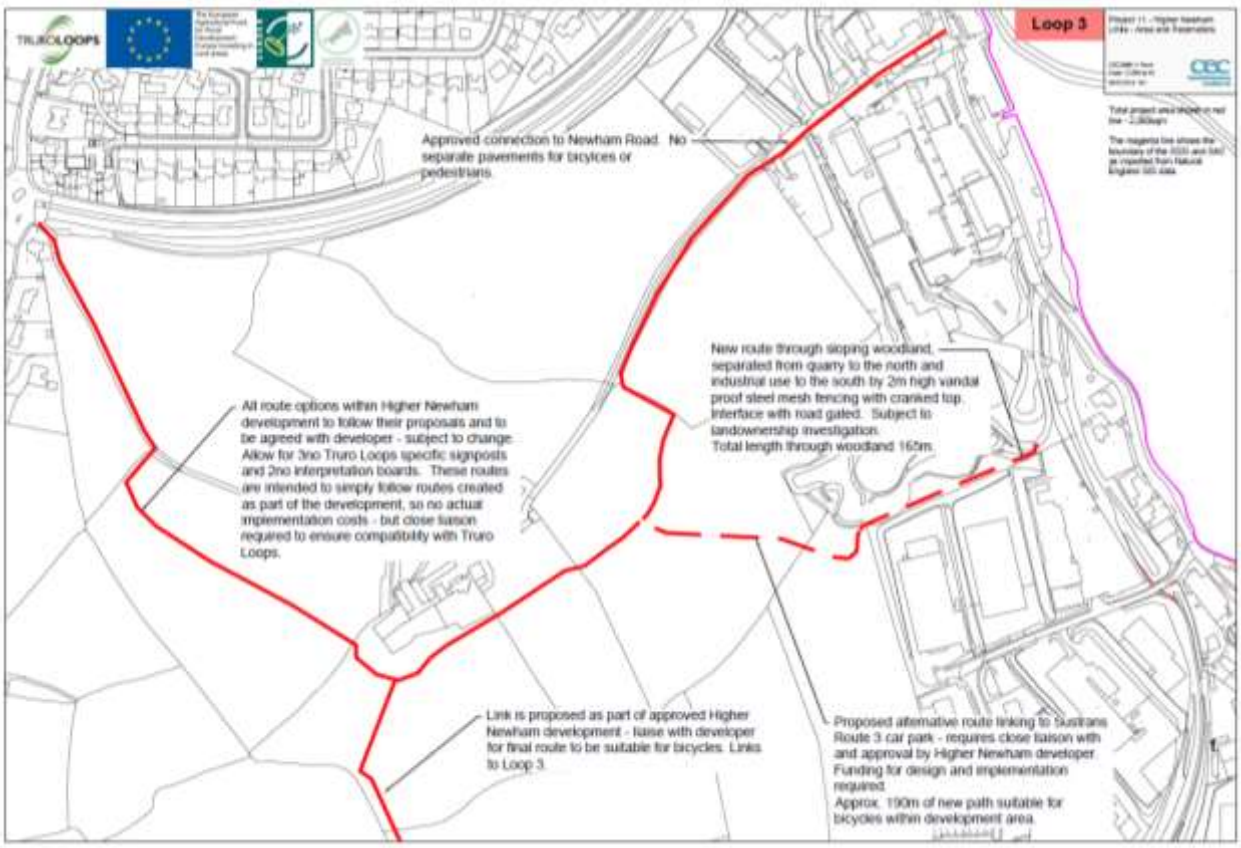

Figure 49: Overview of Area covered by Project 11

Projects 9 and 10 covered the southern and northern parts of Loop 3. Project 11 deals with the remaining section from Arch Hill to Newham Road. Along this section, it is proposed to integrate the route with the Higher Newham development and their proposed cycle connections. The connections as shown in continuous red line reflect draft proposals of the Higher Newham scheme, including the connection to the southern part of Loop 3. This project is primarily about liaising with the Higher Newham developers to enable integration of the Loops and the promotion of the Loop 3 route running through this development.

We suggest a further potential link to Newham Road exiting the Higher Newham development at its eastern boundary, with a new path along a hedge line between the quarry and adjacent land and joining Route 3 at the existing small car park on Gas Hill. This would reduce conflict between cars and pedestrians / cyclists along the narrower Higher Newham Lane and would create an easier connection to Lighterage Quay and the

proposed bridge avoiding having to use Newham Road. This could be particularly important, if Newham Road improvements (Project 6) take longer to implement. However, this link can only be achieved if the Duchy College (key user at Higher Newham including of the land that would be crossed by this route) and Higher Newham developers agree to this proposal (agreement in principle has been expressed during liaison as part of this study, but any detail proposals will have to be agreed with these third parties and Truro Loops will have to find funding for any additional connections).

Project 11 – View over Newham and towards Moresk Forest from potential additional connection

Project 11 – Potential route for additional connection to the left of the gates and road

7.12. Project 12 – A new Destination for Newham - Masterplan for Lighterage Quay and Loop 5 (Suggested Priority 3)

Figure 50: Overview of Area covered by Project 12

This is a suggestion for a masterplanning project that has the potential to provide a substantial uplift to Newham and create an exciting new destination at the southern end of Newham.

The current operations at Newham and the southern end often appear neglected and encourage antisocial behaviour, and the wide range of uses along the quay has not previously been reviewed from a masterplanning perspective that aims to create a new destination as well as supporting existing and new businesses.

Truro Loops includes a suggestion for a new route around the southern end of Newham, which would open up high quality views over the estuary and provide a retreat from and contrast to the business area. There is an existing unused concrete slipway at the southern end. The Rhoda Mary project is also located near there, and is a unique opportunity to create interest in this area.

It is acknowledged that there are conflicts between the business and leisure uses in the area, however, a masterplanning exercise would help to define how this could be addressed for the benefit of all parties. If a new exciting destination was provided at this end of Newham, this would also help in promoting all other businesses along Newham Road. Once the bridge at Lighterage Quay is implemented, benefits would increase even more by offering a further high value green space with easy connection between Malpas / Boscawen Park and the new destination.

Project 12 – Signs of rough sleeping and fly tipping at the southern end of Newham – creating a new destination for South Newham would assist in addressing these issues

7.13. Project 13 – Exploring Truro - Creating the City Loop 4 (Suggested Priority 3)

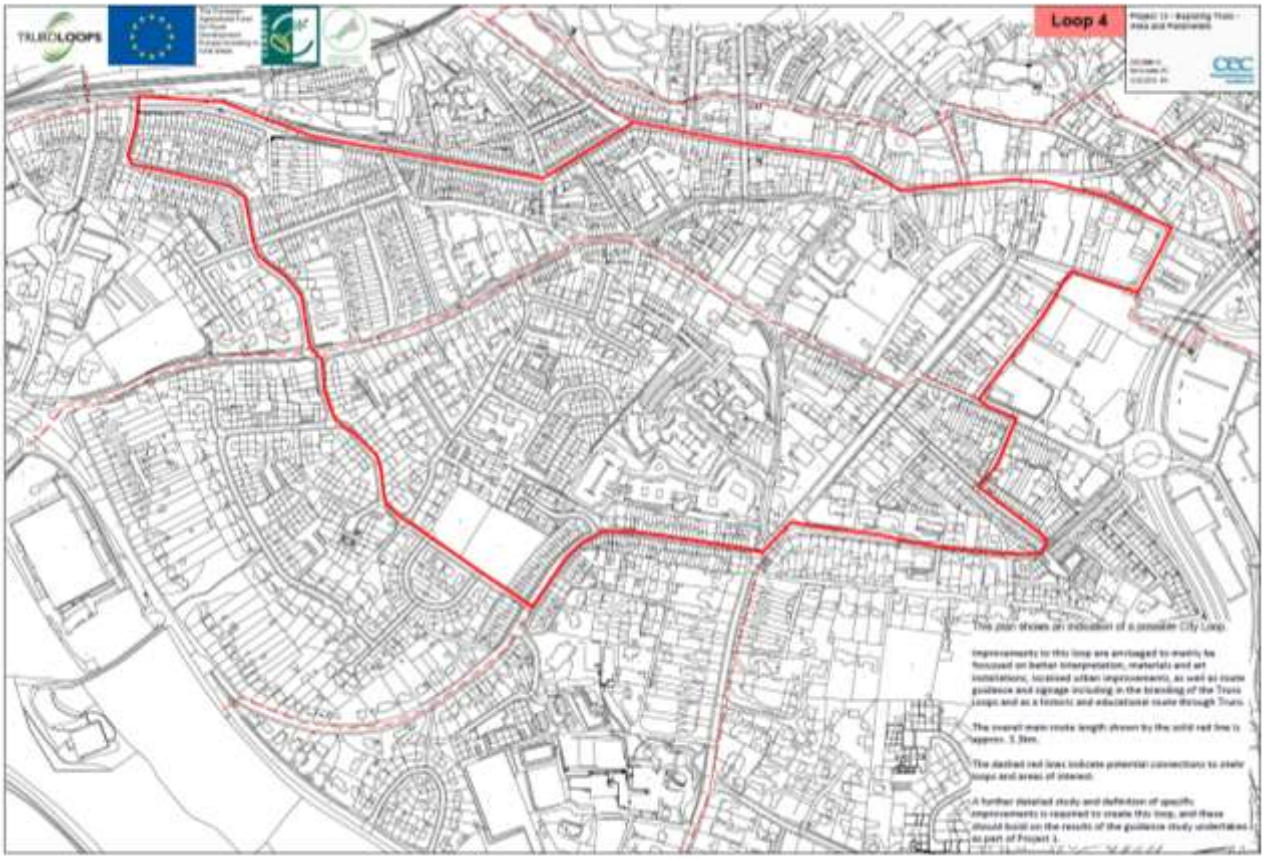

Figure 51: Overview of Area covered by Project 13

Improvements to this loop are envisaged to mainly be focussed on better interpretation, materials and art installations, localised urban improvements, as well as route guidance and signage including in the branding of the Truro Loops and as a historic and educational route through Truro. This study should build on the information prepared as part of Project 1 and could form a follow-on project from it.

A properly designed Loop 4 with many interest points could considerably enhance the urban environment for residents and visitors alike. It should include references to Truro's history, people and environment, and should be designed with education and fun in mind.

7.14. Project 14 – Malpas and Moresk Forest – Creating Loop 6 (Suggested Priority 2)

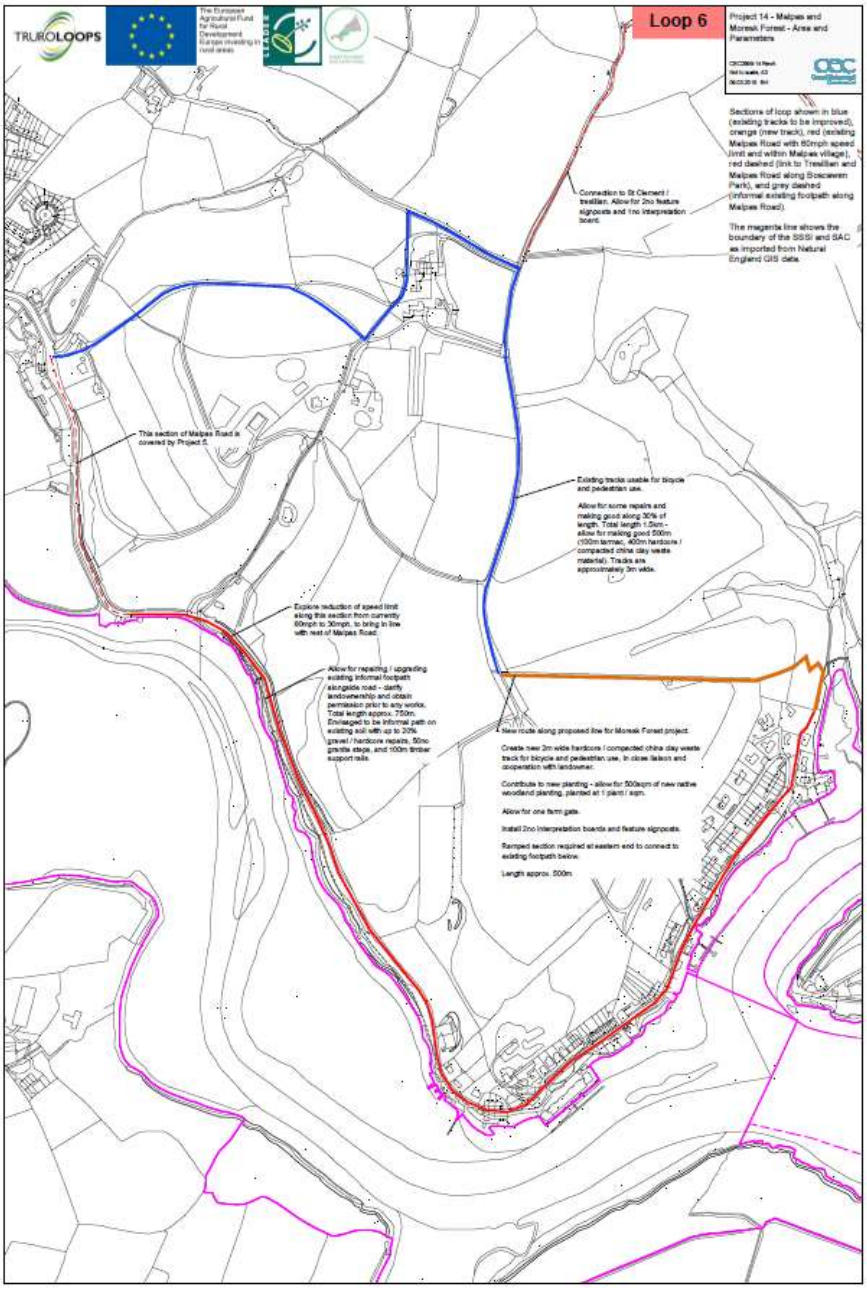

Figure 52: Overview of Area covered by Project 14

This project would result in a defined circular route being available from Sunny Corner through Park Farm to Malpas and back to Sunny Corner or vice versa. Whilst this is possible to do now, it is not promoted and is not usable for cyclists along some sections. The suggested route would be one that could be used by pedestrians and cyclists alike.

Part of this route is shown through land of the Moresk Forest project, pursued by Colin Parker as an individual. A map of his current proposals is included in the Feasibility Study Volume 5 – Third Party Project and Information. The route shown has been discussed with him and would be broadly suitable for cycle access. There is good synergy between the Truro Loops and Moresk Forest projects and there may be fundraising opportunities arising from combining both aspects in funding bids.

The road into Malpas is not particularly pedestrian and cycle friendly and options should be explored further involving Malpas village residents and users of the road, including buses. There is an existing informal and undesignated path in parallel to the road along the estuary edge from Sunny Corner to Malpas and it could be explored whether some simple and low-key improvements here could help to make it more accessible for pedestrians.

This loop is also important for links to wider area routes to the east, including Tresillian and St Clement which could be promoted as part of this route.

Project 14 – Current condition of new link shown for Moresk Forest area, will require some improvement to be usable for cycling

7.15. Thinking about Quick Win Projects

Consideration of potential quick win projects formed an important part of this study. There are however limited options for quick wins considering the overall nature and existing conditions of the study area, and the nature of improvements that are required involving mostly a range of stakeholders and some form of consent or application processes.

There are initial promotional activities that may be considered in year 1 – such as setting up a website, continual building of Twitter feed, setting up Facebook account, and possibly undertaking some information installation at the bridge locations to generate interest and direct people to the website / social media accounts.

The following projects (or parts thereof) are considered to be those that would have immediate impact in terms of improving the overall situation, whilst being relatively simple to implement compared against some of the more complex projects. Nonetheless, these projects require resource and funding allocated to them, so setting up a fully functioning steering group with suitable resources and skills, and obtaining some initial seed funding to enable early studies and projects to be progressed are essential pre-requisites even for these projects considered to be simpler than others to implement.

It is considered that a reasonable timeframe for quick win projects is within the first 2 to 4 years (first half) of the programme, with some initial results in years 2 and 3 (year 1 assumed to be 2018 is likely to be taken up with organising the Steering Group, building relationships with key stakeholders and funders and sourcing funding for design, tendering and funding applications for the high priority and quick win projects).

Projects considered to be possible quick win candidates are:

- **Project 3 – Temporary Park & Float and improvements to junction with Lighterage Quay and entrance to Loop 3 route** – the temporary park & float and opening up of entrance to Loop 3 and better signposting here are the most immediate actions that could feasibly be implemented in shorter timescales.
- **Project 4 – Garras Wharf Access and Link to the City including visitor facilities** – the visitor facilities are not likely to be a quick win, as these will require detail design and planning permission. However, improvements to the underpasses in terms of materials and lighting and to the materials of the pavement around the back of Tesco and some better signage could be easier to achieve in short timescales. This is also a high priority project, so is one with much potential to act as an overall catalyst for the project.

- **Project 7 – Boscawen Park Visitor Facilities** – Whilst the access from the bridge is longer term and will rely on the bridge actually being implemented, better visitor facilities at Boscawen Park are already being considered by Truro City Council. This could be an opportunity for Truro Loops to get these facilities structured in a way that will complement Truro Loops in the future, and could act as an early base to promote the idea, whilst the more complex projects are being developed. This is also a high priority project due to timescales for Boscawen Park facilities proposals.
- **Project 8 – Boscawen Park River Embankments and Slipway Dredging** – Truro Loops could be the catalyst that is needed to achieve these projects moving forward, with immediate apparent benefits to the local community, and in turn receiving some publicity as a result, enhancing the Truro Loops profile. This project would be in close cooperation with Truro City Council, Harbour Authority and the Environment Agency, and funding may be easier to source through the EA.
- **Project 9 – Old Railway Track Improvements and Links to southern Routes** – This could easily be achieved and again be a project with immediate apparent benefits to the community. However, there are funding and maintenance considerations to be resolved.
- **Project 11 - Interface between Loop 3 and Higher Newham Development, Link to Newham** – subject to agreement with Higher Newham developers and their programme, but potential to achieve solution reasonably quickly.
- **Project 14 – Malpas and Moresk Forest** – Potential to achieve local green route relatively quickly with initial landowner contacts made and support in principle secured. Malpas residents need to be involved and consulted – to date no direct engagement has been achieved.

In addition to the above projects (or parts thereof), there may be options of linking to existing Truro events that could help to promote Truro Loops. , or organise a specific event per year.

For example, it could be considered to have some form of extension of the City of Lights in winter into the Malpas and Newham areas. The Boscawen Park festival is a big calendar event in Truro and could be utilised for the benefit of Truro Loops. There could be temporary installations along Malpas Road during that week. Historically, there was a regatta at Truro River. It could be explored whether this could be revived to help to create interest in the Truro River area, even as a one off event initially.

7.16. Innovation in Projects

The projects with the greatest potential to incorporate innovative solutions are:

- **Project 1 – An Identity for Truro Loops** – Street furniture, interpretation and art features all have great potential to incorporate innovative elements, for example use of Apps on mobile phones, interactive street furniture, sustainable materials and locally distinctive designs.
- **Project 2 – Bridges and associated Access** – The potential presence of bridges would be a big innovation for Truro in its own right. The detail design for the bridges can explore innovation further, and this could include aesthetic as well as operational considerations.
- **Project 4 – Garras Wharf Access and Link to City** – There are options for integration of bespoke lighting, colours, innovative materials and art in this project.
- **Project 12 – A new Destination for Newham** – A new masterplan for Lighterage Quay and Loop 5 could bring forward a lot of potential for this area that in turn could promote innovative businesses and uses.
- **Project 14 – Malpas and Moresk Forest** – The Moresk Forest project already includes innovative ideas, including for example off road wheel chairs for disabled people and large areas of native woodland planting on formerly intensive agricultural land. There are many opportunities for environmental innovation associated with Loop 6, including forest schools, habitat creation and heritage promotion.

At the high level of this feasibility study, it has not been possible to identify specific innovative solutions, but the above gives a flavour of what might be possible and the scope for innovation in Truro is considered to be substantial. This in turn would help to attract more innovative people and businesses to the city, which would be beneficial for its future development, and may help to attract further funding.

7.17. Indicative Programme

It is not possible to provide a fixed clearly defined programme for the overall Truro Loops project, as much of it will depend on how quickly resources and funding can be found to push the projects forward. This will not least depend on the availability of suitably experienced and engaged volunteers in the client group, and whether Truro Loops can be linked into wider area funding streams available in Cornwall and nationally.

However, it is possible to provide an indicative programme, encouraging thinking about responsibilities and delivery mechanisms, individual and combined projects.

An initial idea of a possible programme is in Table 14, for further discussion and refinement when a steering group has been formed and projects have been defined further. An overall 8-year timeframe has been assumed to be reasonable at this stage, which should give sufficient time to manage this, without leaving implementation open ended.

The implementation of the bridges and required associated modifications to their access routes and landing points is proposed to occur within the first 4 to 5 years.

It is suggested that efforts should be focussed on the high priority and potential quick win projects, with other projects only progressed if sufficient resource and funding can be found:

High Priority Projects

- Project 1 – An Identity for Truro Loops - Interpretation, Signage, Art and Education Strategy
- Project 2 - Bridges and associated Access - Surveys, Consents, Design, Tendering and Implementation
- Project 4 - Garras Wharf Access and Link to City including Visitor Facilities (parts of this project could be quick win elements)
- Project 7 – Boscawen Park Visitor Facilities (could also be a quick win project)

Potential Quick Win Projects

- Project 3 – Temporary Park & Float and improvements to junction with Lighterage Quay and entrance to Loop 3 route
- Project 8 – Boscawen Park River Embankments and Slipway Dredging (depending on support from Harbour Authority and Environment Agency)
- Project 9 – Old Railway Track Improvements and Links to southern Routes
- Project 11 - Interface between Loop 3 and Higher Newham Development, Link to Newham
- Project 14 – Malpas and Moresk Forest (soft elements through landscape, road and footpath improvements along estuary likely to take longer)

Birds of the Truro River

What a bill!

Glorious Mud

Tips for birding

Bigger Birds

Good birding!

Table 14: Indicative Plan of Implementation

Project	Priority	Suggested Timeframe							
		2018	2019	2020	2021	2022	2023	2024	2025
Truro Loops Launch Event	**1**								
Setting up Steering Group and formalising process for taking this forward. Exploring funding options and entering initial bid rounds if possible. Source fees for professional input for projects development going forward – likely to have to be a continuous process. Manage Steering Group and continue sourcing of funding, tendering and appointing appropriate professionals throughout 8-year project timeframe.	**1**								
Project 1 – An Identity for Truro Loops - Study and Guidance	**1**								
Project 2 – Bridges and Access - Design, Planning and Funding	**1**								
Project 2 – Bridges and Access - Tendering and Implementation – Assuming Lighterage Quay Bridge would be built first	**1**								
Project 3 – Temporary Park & Float and Lighterage Quay Junction – Design, Planning and Funding	2								
Project 3 – Temporary Park & Float and Lighterage Quay Junction – Tendering and Implementation (timeframe would allow for implementation at the same time as Lighterage Quay Bridge)	2								
Project 4 – City to River Link at Garras Wharf - Design, Planning and Funding (initial improvements 2019, visitor centre and further works 2020)	**1**								
Project 4 – City to River Link at Garras Wharf - Tendering and Implementation (initial improvements 2020, visitor centre and further works 2021)	**1**								
Project 5 – Malpas Road Improvements (Malpas House to Sunny Corner) - Design, Planning and Funding	3								
Project 5 – Malpas Road Improvements (Malpas House to Sunny Corner) - Tendering and Implementation	3								
Project 6 – Newham Road Improvements - Design, Planning and Funding	3								
Project 6 – Newham Road Improvements - Tendering and Implementation	3								
Project 7 – Boscawen Park Visitor Facilities – Design, Planning and Funding (feeding into proposals by others) (Tendering and Implementation by others) (envisaged to happen this or next year as advised by Boscawen Parks Manager)	1								
Project 8 – Boscawen Park River Embankments and Slipway Dredging - Design, Planning and Funding	2								
Project 8 – Boscawen Park River Embankments and Slipway Dredging – Tendering and Implementation	2								
Project 9 – Old Railway Track Bed Improvements - Design, Planning and Funding	2								
Project 9 – Old Railway Track Bed Improvements - Tendering and Implementation	2								
Project 10 – A390 Cycle Route and Arch Hill Crossing - Design, Planning and Funding (2018 to 2019 working with Cornwall Council to get project recognised in next funding round of Transport Strategy and to raise funding for professional fees)	3								
Project 10 – A390 Cycle Route and Arch Hill Crossing - Tendering and Implementation (likely to be by others as part of Transport Strategy	3								
Project 11 – Higher Newham and Loop 3 - Design, Planning and Funding	2								
Project 11 – Higher Newham and Loop 3 - Tendering and Implementation (will depend on programme for Higher Newham development – can be brought forward if development goes in earlier)	2								
Project 12 – Masterplan for Lighterage Quay and Loop 5 – Study and Guidance (2019 / 2021 profile raising for this project and gathering support, exploring funding options)	3								
Project 13 – Exploring Truro - Creating Loop 4 – Study, Design, Planning and Funding	3								
Project 13 – Exploring Truro – Creating City Loop 4 – Tendering and Implementation	3								
Project 14 – Moresk Forest / Malpas Loop 6 - Study, Design, Planning and Funding	2								
Project 14 – Moresk Forest / Malpas Loop 6 - Tendering and Implementation	2								

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8. Viability and Cost / Benefit Considerations

An Outline Cost Estimate is included in Volume 01 Appendix 10.3.6. The overall anticipated cost for implementation of all 14 Projects and therefore realisation of the Truro Loops vision is approx. £20M.

Whilst this study sets out an indicative programme, this is not set in stone and is likely to evolve depending on resource and funding availability. The works estimate is therefore based upon current construction costs (1st Quarter 2018). An allowance for inflation must be made for the actual programme once defined by the steering group.

8.1. Cost Overview

The current design sets out the initial feasibility findings and is structured to allow the scope of the final projects within the overall scheme to evolve in line with stakeholder consultation, site opportunities and constraints.

Whilst the design is at an early stage the costs have been produced so that they can equally evolve with the design whilst setting a parameter for that design. The Order of Cost Estimate and the current design have been reviewed by WWA and the designers with individual projects subjected to risk and value management processes to ensure the scheme will deliver maximum value for money for all future users.

The costs within the estimate include reasonable assumptions and these have been discussed and refined with the design team.

A contingency is included which allows for unforeseen issues and risks and the impact that these have on the current costs and design.

Preliminaries are incorporated within each project, which cover the costs of temporary works and management by the main contractor.

Allowance has been made for the Professional Design Consultants required for each Project.

It has been assumed that each project is undertaken as a standalone project.

The estimated costs of the Truro Loops Scheme are listed in Table 15.

Table 15: Overview of Outline Estimate Project Costs

Project		Outline Cost Estimate
PROJECT 1	An Identity for Truro Loops	£79,000
PROJECT 2	Bridges and Associated Access	£6,169,000
PROJECT 3	Temporary Park and Float and Lighterage Quay Junction	£688,000
PROJECT 4	Garras Wharf Access and Link to City	£2,568,000
PROJECT 5	Malpas Road	£2,995,000
PROJECT 6	Newham Road	£3,489,000
PROJECT 7	Boscawen Park Visitor Facilities	£30,000
PROJECT 8	Boscawen Park Erosion Protection and Dredging	£1,298,000
PROJECT 9	Old Track Bed	£317,000
PROJECT 10	A390	£436,000
PROJECT 11	Higher Newham Links	£247,000
PROJECT 12	New Destination for Newham Masterplan	£330,000
PROJECT 13	Exploring Truro	£75,000
PROJECT 14	Malpas and Moresk Forest	£575,000
	TOTAL DEVELOPMENT COSTS	**£19,296,000**

8.2. Viability

The Truro Loops idea would be viable if the projects outlined in this report can generate economic, social and environmental benefits that match or exceed the cost of implementation. A detailed business case and detailed economic review of the projects was outside the remit of this study. It is however considered reasonable to make assumptions as outlined under Cost / Benefit Considerations below, indicating that the idea is viable overall and will be a justified investment of a modest scale into Truro's future, achieving potentially significant benefits in terms of environment, social opportunities, health & wellbeing and economy.

The current 2018 / 2019 budget of Cornwall Council[xii] shows a gross expenditure of £1.2B, with an approved capital programme of £808M and revenue budget of £550M.

According to the Local Enterprise Partnership (LEP), the construction sector in Cornwall & the Isles of Scilly is worth £867M / year, employing approx. 25,000 people. The vision of the LEP[xiii] is to ensure that ***"By 2030 Cornwall and Isles of Scilly will be the place where business thrives and people enjoy an outstanding quality of life".*** Truro

Loops could contribute to achieving this and to sustain the current level of construction activity, which ultimately would support the local economy.

There is a Delivery Plan for investment in Truro [xiv], detailing several million pounds worth of planned investment. It would be crucial to get the Truro Loops scheme recognised as part of ongoing updates to this plan and explore possible funding options.

8.3. Cost / Benefit Considerations

Generally, Truro Loops has direct relevance to delivering Cornwall Council's vision for Cornwall to ***"achieve a leading position in sustainable living",*** including being very relevant to all four core themes of the plan, and thereby potentially being able to support Local Plan delivery and a number of policies in Cornwall.

The Bike Life Bristol 2017 report [xv] has the following staggering headline figures:

> *"There are substantial benefits to Bristol from people cycling:*
>
> - *Over 26 million trips made by bike in Bristol in the past year*
> - *Bicycles take up to 24,515 cars off Bristol's roads each day, equal to a 73 mile-tailback*
> - *£62 million total benefit to Bristol from people riding bikes for transport and leisure annually*
> - *Saving the NHS £1.4 million annually, equivalent to the average salary of 61 nurses".*

Truro of course is a much smaller city, and benefits would be reduced accordingly, but the same principles would apply and notable environmental improvements could still be achieved. Putting Truro on the map for cycling may also mean that extra funding could be unlocked. Bristol has a population of approx. 450,000, compared to approx. 19,000 in Truro (approx. factor 24).

8.3.1. Environmental Benefits

The scheme has the potential to generate substantial environmental benefits through contributing to creation of some new habitats along the edge of Boscawen Park, along Malpas Road, along Sustrans Route 3, along the southern section of Loop 5 and in the Moresk Forest area. It has the potential to substantially raise awareness of the river environment, and its internationally important status, as well as educating about the local environment and the importance of green spaces in an urban environment for flora, fauna

and people.

It is estimated that potentially approx. £1M of the overall budget could be spent on direct enhancement of habitat and green spaces (actual habitat and green space creation excluding hard surfaces, street furniture etc.), delivering long-term benefits for the local environment and strengthening resilience to climate change, as well as increasing biodiversity and landscape structure.

The Bike Life Bristol 2017 report for example states that 26 Million trips were made by bicycle, equating to 87 million miles, saving 13,128 tonnes of greenhouse gases, 26,158 kg of NOx and 2,858 kg of particulates.

8.3.2. Social and Health / Wellbeing Benefits

Social and health / wellbeing benefits are difficult to measure directly. However, the encouragement of less able and less well users to explore external areas and enjoy the local environment could potentially have substantial beneficial knock-on effects for NHS expenditure, by increasing people's health and reducing their need to use the NHS services. This would include additional walking, cycling and river use, as well as more subtle mental health benefits. It has been shown in section 0 of this study that car reliance in Truro is relatively high and that there are a larger number of people classifying themselves as in average or poor health condition.

Health benefits identified in the Bike Life Bristol report include:

> *"In Bristol the physical activity benefits of cycling prevent 27 early deaths annually which is valued at £87 million based on what people say they would pay to improve their chances of survival, and calculated using the method set by the World Health Organisation. Cycling also averts 211 serious long term health conditions annually, saving the NHS in Bristol £1.4 million per year equivalent to the average salary of 61 nurses".*

Other social benefits would include strengthening of communities by offering additional opportunities for joined activities, meetings, providing a sense of pride into their local areas. Building community spirit is an important factor in supporting long-term sustainable living arrangements.

8.3.3. Economic Benefits

There are several studies available that illustrate the benefits of green spaces, see endnotes [xvi] [xvii] [xviii]. The most recent study is from the Land Trust [xix], it summarises some key benefits

identified as follows:

"This report looks at one of the Land Trust's newest parks – Port Sunlight River Park – as a case study to demonstrate how the creation and good quality maintenance of a green space can add value to nearby houses, create and safeguard jobs and generate revenue for local businesses. The benefits include:

- *£7.8 million added to the value of houses within a 500 metre radius of the park – an average of £8,674 per property.*
- *£48,000 annual revenue generated for the small businesses that operate in the park, such as dog walkers and ice cream vendors.*
- *£38,000 a year additional revenue for other local businesses, where people have spent money while visiting the park."*

It is fair to say that delivering £20M worth of projects as part of Truro Loops would support a number of jobs in the county, including in the construction industry and consultancy. Detailed numbers for job support and creation are not available.

It is envisaged that Truro Loops would benefit the local economy further by creating new economic opportunities, for example in relation to visitor facilities and bike hire, as well as helping to promote existing businesses and the economic diversity in Truro.

As established in section 4.4.3, visitor related benefits to Truro are already substantial (data from 2012):

- 52,000 staying visitors
- 873,000 day visits
- £42.2 million direct visitor spend
- £44.6 million total visitor related spend
- 1,200 actual jobs supported by visitor related spend

Truro Loops would help to promote the city further to visitors and increase attractiveness to them, so that an increase from these numbers as a result of Truro Loops could be reasonably anticipated.


LEMON STREET

9. Next Steps – Governance, Support and Funding

This Feasibility Study has brought together available data for the project area, has resulted in raised awareness about the project between key stakeholders and the public, and has defined projects that are required to bring the vision of Truro Loops to fruition. To take this forward with a view to implement the projects over the next 8 years, the following key ingredients are required:

- A **dedicated and active Truro Loops Steering Group** with highly motivated individuals and relevant expertise. It is suggested that this should consist of 10 to 15 people with a range of expertise as set out below, with decision making powers agreed for a steering group management team of 3 to 5. The Steering Group would be responsible for keeping key stakeholders informed and involved as required.
- A **Friends Group of volunteers** that the steering group can approach to help with certain tasks, that spreads public awareness and inputs to making Truro Loops a reality, managed by the steering group. **This could be the existing Truro River Working Group.**
- **Appropriate funding** with an ongoing **fundraising strategy** drafted and implemented and tapping into existing funding pots and initiatives as appropriate (such as Cornwall 2030 Future Transport Strategy, Environment Agency funding, Environmental Growth funding).

These three aspects are discussed in more detail below.

9.1. Governance – Setting up a Steering Group

Setting up an active, fully resourced and dedicated steering group is considered essential to this project. The key responsibilities of the steering group are envisaged to be:

- **Drafting a Funding and Implementation Plan** and updating this at least on a six-month basis to reflect changing resource and funding availabilities.
- **Draft a set of governance rules including vision and objectives**. This should also include required communication lines and responsibilities.
- **Resolve relationship of existing TRWG Community Interest Company** with the Steering Group. Define purpose going forward, communication routes and responsibilities. It is suggested that the existing CIC could act as the vehicle for future funding and legal agreements, this would require formalising.

- **Resolve relationship of wider TRWG with Steering Group**. Define communication routes and responsibilities. It is suggested that the existing wider TRWG would act as a supporting Friends Group, see section 9.2 below.
- **Involve and liaise with / keep up to date key stakeholders** as set out in section 3.2.
- **Raise stakeholder awareness of Truro Loops and its projects** with relevant decision makers, Council departments and third parties such as developers, Sustrans, local businesses.
- **Raise public awareness and administer public interface** including website (to be set up) and social media.
- Use the Project Briefs and Concept Plans in this Feasibility Study to **develop projects** by sourcing appropriate funding and completing applications as required, drafting tender briefs for consultancy services, commissioning consultants to progress designs / studies, overseeing planning and consent applications and working with consultants to achieve best outcomes, overseeing preparation of tender packages for actual works on the ground and commissioning contractors.
- Work with third parties to ensure responsibility and funding for **future maintenance of implemented projects** is clear and agreed.
- **Accounting and management of any funding** provided.

It is considered that a Steering Group should consist of approx. 10 people and that the following responsibilities and skills should be covered (illustrated in principle in **Figure 53 – Organigram**):

- **Steering Group Management Team** consisting of 3 to 5 people with core responsibility for decision making and management of all aspects relating to project delivery. These people should have a thorough understanding of project delivery and management, and ideally have knowledge of funding and project implementation.
- **Communications and Public Relations Officer** responsible for media interface, public relations and social media / web presence. Should have strong previous background in this field. The officer should work with 2 other people to deliver this.
- **Stakeholder Engagement Officer** to coordinate engagement with key stakeholders and build relationships with core partners such as Cornwall Council.

Truro City Council, Environment Agency, Natural England and Harbour Authority. The officer can assign specific responsibilities to others, including from the wider TRWG, depending on their skills and knowledge of these parties.

- **Accountant / Financial Officer** to oversee all financial matters including administration of grants / funding. Should have strong previous background in this field. The officer will be supported by volunteers to explore funding options and pull together funding bids.
- **Administration and Events Officer** to take minutes, keep records and administer file storage for Truro Loops.
- **Project Coordinator** to oversee project delivery and work with individual **Project Managers** dealing with individual projects. It is suggested that the best way to take this forward would be assigning specific projects to specific people to push forward, under the direction of the Steering Group management team and in line with the Funding and Implementation Plan. These people should have design and project delivery expertise.

It is unlikely that the above structure can be achieved solely on a voluntary input basis. A first task for a Steering Group would be to discuss how much paid resource may be required to set up such a group. It would then be key to discuss options for resources with core stakeholders such as Cornwall Council and the Environment Agency, as well as exploring grants towards part-funding any posts.

In addition to the Steering Group, the organigram below identifies advisors and volunteers working with the Steering Group. Key functions would be:

- **Disability Advisor** to work with Project Coordinator and ensure that consideration of a range of abilities of users is covered in the project designs.
- **Legal Advisor** to assist with drafting up any agreements, arranging commissions and funding agreements, helping with future maintenance arrangements, checking governance issues if required.
- **A range of volunteers** – including social media, printed media, funding applications, events helpers.

Reporting and communication structures will have to be detailed, so that there is a continuous feedback between the Steering Group Management Team and other roles and vice versa. It will be essential that communication and decision-making routes are clear and adhered to by all involved.

A Project Launch after completion of the Feasibility Study would be a good opportunity to raise awareness of the proposed structure going forward and request suitably skilled people to come forward to get involved in the project. Discussions can then be taken forward from there. **Key to success of Truro Loops will be a high profile and wide knowledge about it being achieved throughout Truro and Cornwall, and key stakeholders buying into the delivery of the projects, with appropriate funding streams being accessed.**

In terms of non-human resources, it would be advisable for the Steering Group to search for a suitable small office space and have 3 computers / laptops available for use by the group at any time – these should be owned by the Steering Group. A website and its setup and design will also be required. Regular meeting space will be required.

It is suggested that the Steering Group will have to meet at least on a quarterly basis. Wider TRWG / Friends meetings should be on a six-month basis to keep a wider audience informed of progress and enable involvement of volunteers as required.

9.2. Support – Working with a Friends Group

The Steering Group will have to rely on volunteers in many aspects to deliver Truro Loops. The wider TRWG can play an essential role in providing these volunteers, who will then be managed by the Steering Group members depending on the tasks at hand.

The wider TRWG could be referred to as Friends of Truro Loops going forward and be actively involved in pushing this project forward. Alternatively, if it is felt that TRWG could not be extended to focus on the wider project area, it may be advisable that a new Friends of Truro Loops group is set up and that the wider TRWG becomes a stakeholder for the river-related projects, rather than extension of the Steering Group. This should be explored further and resolved by the Steering Group, once in place.

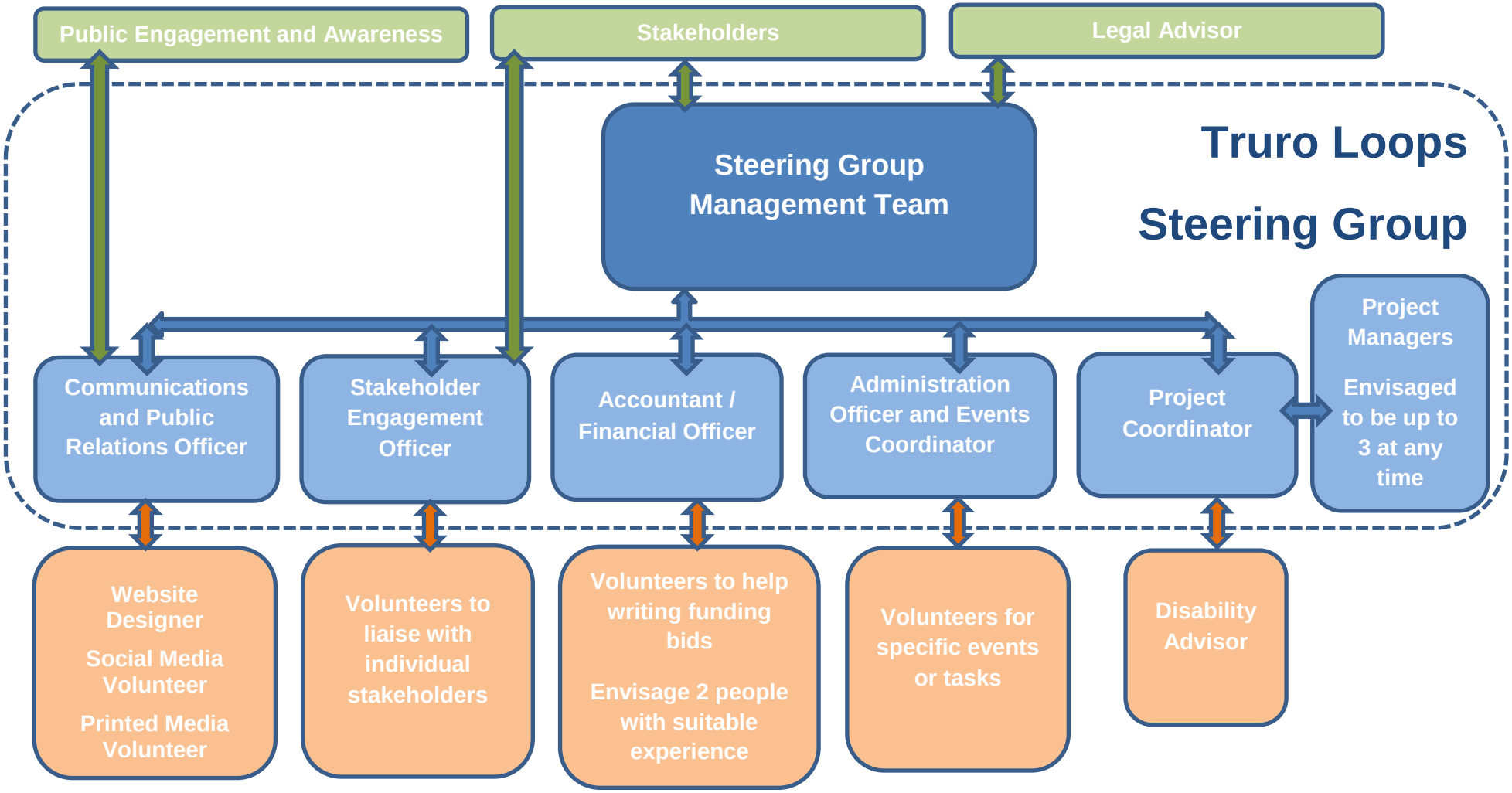

Figure 53: Organigram of a suggested Steering Group and Key Communication Routes

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9.3. Funding – Implementing the Projects

Success in souring appropriate funding for the projects will ultimately determine the success of the overall Truro Loops idea. It is considered **essential that one of the first activities of the Steering Group should be to put together a Funding and Implementation Plan** based on the initial considerations presented in this Feasibility Study. This should consider the available resources in the steering group, the project priorities identified in this report and the availability of funding pots at any given time. It will therefore have to be a flexible document that is reviewed on a half year basis to adjust to any changes in resources and funding availability.

It may also result in re-definition of project priorities. For example, a project identified with a lower priority of 3 in this report may be implemented early if funding for this particular aspect of Truro Loops becomes available. However, this must be decided on a case by case basis evaluating available human resources in the steering group, so as not to jeopardise delivery of any projects that may already be under way.

This Feasibility Study contains an Outline Costing Report for all projects in Appendix 10.4.3. A summary of overall project costs with initial consideration of potential funding opportunities for each is in Table 16 below. Access to any funding will require preparation of bids to access this funding and the steering group will need to ensure sufficient resources are made available to put together these bids.

Generally, possible funding pots may include:

- Any remaining European Funding that may be accessible before Brexit
- Government funding rounds – explore further and lobby local government / MPs
- Coastal Community government funding
- HLF and National Lottery Funding
- Linking up with the Cornwall Council Environmental Growth Team and discuss funding options with them
- Linking the Truro Loops project into the Cornwall Council Transport Strategy 2030 and aiming to get some of the projects recognised and funded as part of this
- Exploring funding related to tourism and better visitor experience
- Section 106 funding
- Community Infrastructure Levy funds
- Involve LEP and discuss funding options with them
- Sponsorship from businesses
- Local fundraising

Table 16: Truro Loops Overview of Headline Project Costs and potential Funding Opportunities

Please note – the funding opportunities below are indicative and the list is not exhaustive –parties mentioned below have to date NOT been engaged in detail about the projects, and detailed discussions and further research will be required to source funding. Other opportunities may arise during the course of these projects being progressed.

Project Overview	Headline Cost Estimate	Potential Funding Bodies – Steering Group to explore further
Project 1 – An Identity for Truro Loops - Interpretation, Signage, Art and Education Strategy (all loops)	£79,000	HLF / National Lottery Local businesses sponsorship Tourism related funding pots
Project 2 - Bridges and associated Access - Surveys, Consents, Design, Tendering and Implementation (Loop 1)	£6,169,000	Coastal Communities funding Environment Agency funding streams if possible Section 106 funding
Project 3 - Temporary Park & Float and Junction with Lighterage Quay and Loop 3 (Loops 1, 3 and 5)	£688,000	Cornwall Council – Section 106 funding Harbour Authority Tourism related funding pots
Project 4 - Garras Wharf Access and Link to City including Visitor Facilities (Loop 1)	£2,568,000	HLF / National Lottery Cornwall Council maintenance and transport funding, Section 106 funding Tourism related funding pots
Project 5 – Malpas Road Pedestrian / Cycle Improvements – Malpas House to Sunny Corner (Loops 1 /2)	£2,995,000	Cornwall Council Transport Strategy 2030, if project can get included in future rounds of funding of this strategy
Project 6 – Newham Road Review of Cormac Study (Loop 1)	£3,489,000	Cornwall Council Transport Strategy 2030, if project can get included in future rounds of funding of this strategy
Project 7 – Boscawen Park Visitor Facilities (Loops 1 and 2)	£30,000	Local businesses and users fundraising / sponsorship HLF / National Lottery Tourism related funding pots Section 106 funding
Project 8 – Boscawen Park River Embankment Improvements and Slipway Dredging (Loop 2)	£1,298,000	Environment Agency funding streams if possible
Project 9 – Old Railway Track Bed Improvements and Link to southern Routes	£317,000	Environmental Growth funding streams if Loop 3 southern route can be integrated as part of links to the south Local fundraising Discuss with Sustrans

Project Overview	Headline Cost Estimate	Potential Funding Bodies – Steering Group to explore further
		Section 106 funding from adjacent developments
Project 10 – A390 Cycle Route and Crossing at Arch Hill Roundabout	£436,000	Cornwall Council Transport Strategy 2030, if project can get included in future rounds of funding of this strategy
Project 11 – Interface between Loop 3 and Higher Newham Development, Link to Newham	£247,000	Green Infrastructure funding if it can be linked to habitat improvement measures Section 106 funding
Project 12 – A new Destination for Newham - Masterplan for Lighterage Quay and Loop 5	£330,000	HLF / National Lottery Local businesses sponsorship Harbour Authority / Cornwall Council if this can be integrated with local development plans
Project 13 – Experiencing Truro - Creating the City Loop 4	£75,000	HLF / National Lottery Local businesses sponsorship Tourism related funding pots
Project 14 – Malpas and Moresk Forest – Creating Loop 6	£575,000	Environment Agency catchment areas habitat enhancement funding Environmental Growth and Green Infrastructure funding via Cornwall Council Local fundraising with users, visitors, residents Tourism related funding pots

For full information refer to the Outline Cost Plan prepared as part of this Feasibility Study (Appendix 10.4.3).

Report ends.

10. Appendices

Appendices are provided as separate documents where stated. A list of appendices is below, stating whether these are included in this main study or provided as separate files:

Overview of Appendices in Volume 1

Appendix number	Title	Location, format and licensing if applicable
10.1	**Glossary**	Included in Vol01 pdf.
10.2	**Tender Brief**	Included in Vol01 pdf.
10.3	**Proposals and Projects**	
10.3.1	The Loops Overview Plan	Separate PDF files with mapping background and aerial photo background – Vol01-App10-3. Produced by CEC Ltd.
10.3.2	Project Briefs	Included in Vol01 pdf.
10.3.3	Project Concept Drawings	Separate PDFs for each project – Vol01-App10-3-3. Produced by CEC Ltd.
10.3.4	Bridge Drawings and Risk Assessment	Separate PDFs – Vol01-App10-3-4. Produced by Hewson Engineering.
10.3.5	Technical Considerations for Bridges	Included in Vol01 pdf.
10.3.6	Outline Cost Plan	Separate PDF – Vol01-App10-3-6. Produced by WWA Surveyors.
10.4	**References and List of Third Party Research**	Included in Vol01 pdf.

Overview of Information in other Volumes

Appendix number	Title	Location, format and licensing if applicable
V2	**Volume 2 - Surveys and Assessments**	
V2-01	Preliminary Ecological Appraisal	Volume 2. PDF. Produced by CEC Ltd.
V2-02	Condition and Landscape Survey incl. Photographs	Volume 2. PDF. Produced by CEC Ltd.
V2-03	Flood Risk Assessment	Volume 2 PDF. Produced by Hydrock.
V2-04	Non-Motorised Users Transport Review	Volume 2. PDF. Produced by Hydrock.
V2-05	Visitor Facilities Options Appraisal	Volume 2. PDF. Produced by PBWC.
V3	**Volume 3 - Data**	
V3-01	Mapping	Cornwall Council IT system – pdf print of study area provided in Volume 03 for record. 1:25,000 and 1:10,000 OS Raster Imagery provided by Cornwall Council under license for use on this project only to produce maps included in this report.
V3-02	Aerial Photographs	Cornwall Council IT system – pdf print of study area provided in Volume 03 for record. Get Mapping Raster Imagery provided by Cornwall Council under license for use on this project only to produce maps included in this report.
V3-03	Lidar Data	Purchased from Emapsite. Original data held on CEC IT system – pdf print of study area provided in Volume 03 for record.
V3-04	Landownership	Included in this report. Pdf files from Cornwall Council and private individuals. For use on this project only. Detailed landownership searches for projects will be required.
V3-05	Public Rights of Way and Roads	Volume 3. PDF and SHP in zipped format. Produced from Council Data and OS mapping provided by Council.
V3-06	Utility Information for bridge locations and partially along Newham and Malpas Roads	Volume 3. PDF. Provided through Hydrock – high level search – further detailed searches and interrogation of information required for individual projects.
V3-07	Historic Environment Data	Volume 3. PDF and shp. Provided by HER for use on this project only.
V3-08	Information from the	Volume 3. PDF. Provided by Environment

Appendix number	Title	Location, format and licensing if applicable
	Environment Agency	Agency for use on this project only.
V3-09	Cornwall Cycle Monitoring Results	Volume 3. XLS and MSG. Data provided from Cornwall Council via Simon Murray, Sustrans.
V3-10	Ecology Tresillian CWS Sheet	Volume 3. PDF. Provided by Cornwall Wildlife Trust (see ecology report and appendices in Volume 2 (ref V2-01) for more data and information).
V4	**Volume 4 – Consultation Material and Results**	
V4-01	List of Stakeholders approached during Feasibility Study	Volume 4. Pdf.
V4-02	Stakeholder Letter and Attachments	Volume 4. Pdf.
V4-03	Public Consultation Material	Volume 4. Pdf.
V4-04	Meeting Records	Volume 4. Pdf.
V4-05	Stakeholder Feedback and Forms	Volume 4. Pdf.
V4-06	Public Consultation Feedback	Volume 4. Pdf.
V5	**Volume 5 - Third Party Projects and Information – as listed below included in separate Volume 4**	
V5-01	Newham BID Project Proposals	Volume 4. PDF. Owned by Newham BID.
V5-02	Truro Cycling Campaign Tube Map	Volume 4. PDF. Owned by Truro Cycling Campaign.
V5-03	Cormac Newham Road Improvement Proposals Feasibility Study	Volume 4. PDF. Owned by Cormac.
V5-04	Moresk Forest Proposals	Volume 4. PDF. Owned by Colin Parker, Park Farm, Malpas.
V5-05	Higher Newham Development Information	Volume 4. PDF. Owned by Living Villages, Higher Newham Developer.
V5-06	Boscawen Park Proposals for visitor facilities	Volume 4. PDF. Owned by Truro City Council.
V5-07	Looe Valley Trail Example.	Volume 4. PDF. Provided by Simon Murray, Sustrans.
V5-08	Rhoda Mary	Volume 4. PDF. Provided by Mel Richardson, Newham BID.
V5-09	SuPort Study	Volume 4. PDF. Provided by Loic Rich.

10.1. Glossary

To be completed by all as required

.jpg	Compressed image format standardized by the Joint Photographic Experts Group (JPEG) commonly used for storing digital photos
AOD	Above Ordnance Datum. Ordnance Datum is the vertical datum point from which all altitudes are derived, for Great Britain OD is taken to be mean sea level at Newlyn in Cornwall between 1915 and 1921.
AONB	Area of Outstanding Natural Beauty
BID	Business Improvement District
CA	Conservation Area
CEC	Cornwall Environmental Consultants
EA	Environment Agency
km	Kilometre
NCA	National Character Area – landscape character area defined at national level
LCA	Landscape Character Area – defined at local level
LDU	Land Description Unit
LEP	Local Enterprise Partnership
LVIA	Landscape and Visual Impact Assessment
m	metres
OAL	Open Access Land
OS	Ordnance Survey
PRoW	Public Right of Way
RPG	Registered Park & Garden
SM	Scheduled Monument
TRWG	Truro River Working Group

10.2. Tender Brief

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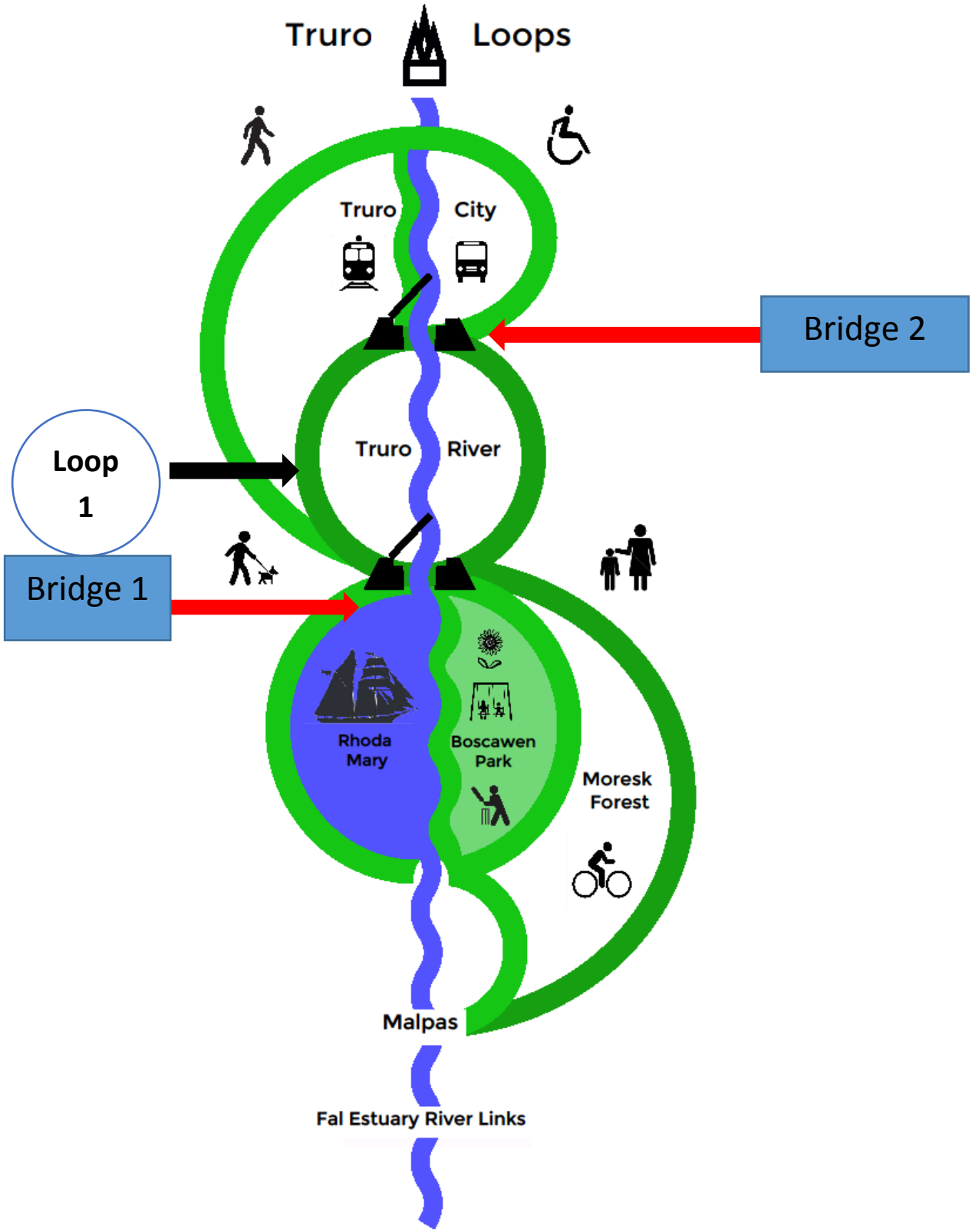
Truro River Working Group CIC

Formalised Feasibility Study Brief

The Truro Loops Project

30 January 2017


Truro Loops
Truro City
Bridge 2
Loop 1
Truro River
Bridge 1
Rhoda Mary
Boscawen Park
Moresk Forest
Malpas
Fal Estuary River Links

Note: This document formalises the Truro Loops Project Briefing Paper and A4 brief published 9 August 2016

1 INTRODUCTION

1.1 Truro River Working Group (TRWG) is looking for a company to undertake a feasibility study into the viability and potential of the Truro Loops Project.

1.2 Truro Loops Project is a multi-faceted connectivity project designed to open up the river frontage, and walking/cycle only routes around the City Centre with the prime focus being the Truro river waterfront at Malpas and Newham. The vision for the project is to enable residents, tourists, commuters, business people and visitors from other parts of Cornwall to enjoy 'car free' access to the City and many of its riverside and open areas.

1.3 Despite Truro's City status and its waterside location which historically played a key role in the economic growth of Truro, the waterside remains a hidden and under-utilised asset. This project takes the first steps towards addressing that issue by exploring what solutions might be possible.

1.4 Truro River Working Group is looking to appoint a company whom can recommend innovative, cost effective solutions to the challenges of the Truro Loops Project, solutions that generate incremental benefits to the City of Truro, its residents, tourists, commercial/business operators and the local authorities. Solutions should lead to improving Truro's ambience, competitiveness, sense of well-being and pride as well as having positive social and economic outcomes.

2 BACKGROUND

2.1 Truro River Working Group (TRWG) is a new Community Interest Company set up specifically to progress the Truro Loops Project. Participants include members from Truro City Council, Cornwall Council, local residents and representatives of interest groups, such as AONB, Cycle and Watersports.

2.2 Directors and members of TRWG alongside community representatives have regularly attended meetings to progress the project and have engaged with a wide number of stakeholders to initially 'test the water' for this project. A number of events have been staged including a well-attended press shoot with subsequent article in the West Briton, walking and a heritage bus tour of the prospective routes or 'loops'.

2.3 TRWG have successfully passed through stage one of a two stage funding application to draw down LEADER (European) funding to pay for this feasibility study. A final application is being written and it is anticipated that there will be a funding decision on or around 20 April 2017. TRWG have also been successful in attracting modest match funding and in-kind support.

2.4 This project, whilst new, complements the vision and potential projects outlined in the Newham Action Plan (2011) put together by the Newham Improvement Project (NIP) group who identified the potential for a bridge and better riverside access via paths and cycle ways but also flagged this project as a challenging one requiring in-depth research.

The Newham Business Improvement District, established in 2013 has delivered some of the actions outlined in the NIP plan and is working with partners to progress others. One of Newham BID's projects, which is earmarked for growth deal funding, is to widen Newham Road beyond Gas Hill and provide a multi-use cantilevered foot/cycle path alongside, which complements the Truro Loops project.

There are also good links between Truro Loops and Truro BID's 'Connected Truro' project, currently underway. Hence, both Newham BID and Truro BID are supportive of the feasibility study proceeding and can see the benefits of the wider project.

3 PROJECT OBJECTIVES

3.1 Truro Loops project has a number of key objectives:

a) To dramatically improve connectivity throughout the whole 'Loops' area especially for local residents & commuters, visitors and recreation users arriving on foot, by boat or by bicycle.

b) To open up the river, including incremental river traffic (which may be subject to sensitive dredging) and adjacent areas to become a dramatic and useable place for recreation and peaceful enjoyment of this stunning location – 'creation of a City Centre promenade'.

c) To justify road improvements in Newham to not only provide safe passage for pedestrians and cyclists, but also increase and improve vehicular traffic for an increasingly vibrant business and commercial centre.

d) To fully utilise the Newham branch railway track-bed as a heritage trail (with Heritage/Visitor Centre and 'story boards', as well as a pedestrian/cycle path.

e) To encourage sustainable navigation around the city, linking in with existing walking/cycle routes and trails and other linkages where applicable.

4 PROJECT OUTCOMES/BENEFITS

4.1 The Truro Loops Project, if implemented following the completion of the Feasibility Study is expected to have the following outcomes:

f) Showcase Truro's waterfront, opening up an under-utilised asset for local people and tourists to enjoy, recognising Truro's strapline of 'our great little city' (possibly earmarked as European City of Culture 2023)

g) Bring economic benefits to Newham and Truro businesses as tourists and visitors are encouraged to explore the City's offer and linger longer.

h) Encourage more people to explore the city by foot and by bike and to make sustainable trips to Truro and Newham.

i) Visually improve the City's physical landscape and infrastructure as well as providing a new reason to visit; the potential for a new bridge(s) and/or a visitor centre would enhance this.

j) Educate and inspire people through providing details on Truro's cultural and heritage past.

5 OUR REQUIREMENTS

5.1 TRWG is seeking to commission a company who can do the following:

- Prepare a Feasibility Study for Truro Loops, assessing the feasibility, viability, costs, benefits, issues, impacts and opportunities of the project including consideration of one or two bridges, a visitor centre and the potential to dredge the river if fully justified.
- Project manage the Feasibility Study, subcontracting to other consultants or partners where necessary but appointing one overall project manager to co-ordinate the work and to liaise with TRWG.
- Report regularly on progress of the Study starting with an induction meeting and then no more than three review meetings including the presentation of the interim and final report.

- Compile an interim and final report (2 bound hard copies and an electronic copy) including drawings/photographs and design solutions.
- Undertake necessary surveys to include site surveys, desk research and data collection (data to include that relating to landscaping, transport, land ownership, ecology, flood risk and anything necessary to ascertain options for the bridge(s) and visitor centre).
- Provide an Ecological Appraisal including desk study, site visit and report,
- Undertake consultation with key stakeholders (Cornwall Council teams, Natural England, Environment Agency etc) including one to one meetings where appropriate with key personnel. TRWG would expect the appointed consultant to have discussed ideas/solutions with the planning authority and other key players to check that 'in principle' the recommendations might be acceptable/viable.
- Undertake wider consultation via a minimum of one City Centre event and provide an analysis of the results.
- Where possible, provide information on or signpost to potential funding sources for the subsequent capital project to be implemented.

5.2 Specifically, TRWG is looking for the appointed company to assess the following:

- **Loop 1 –** forming an 'inner loop' cycle/pedestrian walkway around the upper Truro River with Garras Wharf (North End) and the Newham Flood Barrier (South End) as the key access points.
- TRWG believe this will involve the following considerations:
    - Feasibility/viability of installing a lightweight lifting or movable span bridge to facilitate marine traffic such as yachts and access structures for pedestrian and cyclists' use adjacent to the Newham Flood Barrier at the South End of the Inner Loop road and constructing the walking/cycling priority paths on both the East and West sides of the river.
    - Consider design, necessary approvals, financing (including possible crowdfunding), constructing and setting up operating procedures consistent with Truro Harbour Authority requirements and appropriate for pedestrian, cyclist and marine users.
    - Around the Truro River basin, assess the potential to 'make good' river banks where erosion has taken place.

- Construction/improvement of River Basin pedestrian and cycle paths including, where appropriate, raised boardwalks or equivalent and related landscaping and furniture (such as seating/observation areas)
- On the Newham (West side of the basin) and from the end of the existing towpath, assess feasibility of new footpaths and/or modified use of Newham Road and/or adjacent verges to cater for pedestrians/cyclists whilst not constricting future traffic flow, consistent with a vibrant business and future residential community
- Assess environmental, planning/regulatory, costing, financing and overall technical feasibility of the project, together with the potential local employment implications and benefits (or otherwise) to the overall character and wellbeing of Truro/Newham and environs, its residents, businesses, visitors, wild life and natural habitats
- Assess costs/benefits, challenges and implications (commercial, environmental and marine life) of dredging the navigational channel of the Truro River Basin to permit ferry/pleasure craft access to Town Quay, ideally at all states of the tide (e.g. a minimum of 2 metres depth) and ability to reprocess dredged material for onward reuse (such as bird habitats and/or building materials)
- Assess costs/benefits of a Heritage Visitor Centre with history boards, tourist information, catering, boat and cycle hire and parking.

- **Loops 2 to 5 –** the construction/modification of three further 'loops', all of which require the construction/upgrading from the Newham (Dutch bridge) and including an 'outer loop' which is already in operation along its western section, the track-bed of the former GWR branch from Newham to Highertown (Penwethers junction). The 'Northern' part of the outer ring would require joint use of existing roads/river frontage.
  - Assess overall feasibility including cost/benefit of additional pedestrian/cycle loops and advise which (if any) could be feasible future additions to the Truro Loops Network, once the Core Loop 1 is operational (unless it is cost effective to consider constructing/modifying additional loops at the same time as Loop 1)
  - Consider provision of seasonal car parking at Lighterage Quay for walkers and Cyclists and Rhoda Mary visitors as well as for any future 'park and float'

services.

- If justified, consideration of a second light movable span bridge at Garras Wharf to complete the inner loop and avoid the use of Morlaix Avenue 'as a bridge' for pedestrians and cyclists.

10.3. Proposals and Projects

The following pages include Project Briefs and technical information. Plans are provided as separate appendices files. These are all preliminary and illustrative constituting possible feasible options for projects on which the Outline Cost Plan in Appendix 10.3.6 has been based. These proposals will require further work, review and detailing, should they be taken forward following completion of this study.

The project summaries in 10.3.2 are intended to provide an overview of project areas, components and key considerations to act as a brief for any work on these going forward and should be read in conjunction with Section 7 in this report and relevant drawings.

This appendix consists of the following sub-sections, with some files provided separately as stated:

10.3.1	The Loops Overview Plan	Separate PDF files with mapping background and aerial photo background – Vol01-App10-3. Produced by CEC Ltd.
10.3.2	Project Briefs	Included in Vol01 pdf.
10.3.3	Project Concept Drawings	Separate PDFs for each project – Vol01-App10-3-3. Produced by CEC Ltd.
10.3.4	Bridge Drawings and Risk Assessment	Separate PDFs – Vol01-App10-3-4. Produced by Hewson Engineering.
10.3.5	Technical Considerations for Bridges	Included in Vol01 pdf.
10.3.6	Outline Cost Plan	Separate PDF – Vol01-App10-3-6. Produced by WWA Surveyors.

10.3.1. Truro Loops Overview Plan

See separate pdf files in Volume 01 Appendices – App10-3-1.

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10.3.2. Project Summaries

The following pages contain a streamlined table format overview of each key project as discussed in Section 7 in this report, to inform more detailed project definitions to be prepared for work going forward and defining the scope that is covered in the Outline Cost Plan included in 10.4.3 in this report.

Project 2 has the potential to exceed OJEU procurement thresholds for supply of services as well as works, if both bridges are pursued as one project. Subject to final designs and funding options, careful consideration of procurement of this project is required to ensure funder requirements are adhered to.

It should be noted that all information in the project summaries is based on current knowledge of the project area. During detailing these further, additional surveys, consents or other requirements may arise – the summaries outline key requirements and should not be treated as comprehensive. It is recommended that allowances for deviations and additional requirements be made in any funding applications or detailed briefs prepared from the summaries in the form of some contingencies.

Project 1 – Developing an Identity for Truro Loops – Interpretation, Signage, Art and Education Strategy (all Loops)

Project Area and Scope	Shown on Drawing CEC2999-01 and further detailed below.
Summary Description	Develop an identity for the Truro Loops project that enables consistent promotion, legible and well signed routes for pedestrian and cycle use, visual recognition of the identity of the Loops throughout, realisation of educational opportunities and overall enhancement to the urban and natural environment and fabric in the Loops project area through art, interpretation and signage provision. This should result in a design guide and up to 5no fully detailed key projects for implementation.
Key Requirements	• Develop Logos and branding • Review existing interpretation, art and signage throughout, review existing educational uses • Explore and review other existing initiates and whether there are opportunities to link or incorporate • Define strength / weaknesses / constraints / opportunities • Engage stakeholders including businesses, local groups and schools to ensure that particularly interpretation and education offerings meet their requirements and complement their curriculums / interests • Develop options for interpretation / educational tools including exploring use of apps and electronic displays • Review use of art in street furniture, surfacing, bridges and as stand-alone features. Consider collaboration with university students. • Suggest approach and theme / themes for incorporation of art • Consider disability requirements and explore how proposals can be made usable for people of a range of different abilities • Consider maintenance of items going forward and discuss arrangements with relevant parties as required • Develop design guide and material palette for interpretation, street furniture / railings, art and signage, and work with Cornwall Council and Truro City Council to get this adopted as supplementary Development Plan Document if possible • Review funding and implementation options and identify a strategy of implementation for key elements throughout the Truro Loops area
Key Outputs	• Adopted Design Guide including Material Palette for Interpretation, Street Furniture, Art and Signage in and around Truro, linked to educational and information needs of local stakeholders including schools,

	businesses and local interest groups • Implementation Programme with Funding Options • Maintenance Responsibilities and Plan including how this will be funded • Designs for up to 5 Key Projects (5 locations) to Stage 4 – Technical Design • Identity for Truro Loops including Logo and Branding
Surveys required	• Site survey of existing signage, interpretation, street furniture / railings, art • Utility searches, landownership and possibly topographical surveys for specific locations if required as part of a detailed proposal
Consents required	• Agreement from relevant departments at Cornwall Council and Truro City Council to the Design Guide and for new or replacement items such as street furniture or signs • Possibly planning consent for specific projects arising from this
Other Considerations	• Links to the wider area network of routes around Truro should be included in any signage and interpretation to enhance wider area connectivity. • Suggest that this should be led by a landscape architect for best results but may also require some engineering and planning specialist input. • Must include a disability advisor.

Project 2 – Bridges - Surveys, Design, Consents, Tendering and Implementation (Loop 1)

Project Area	Shown on Drawings CEC2999-02a and CEC2999-02b and further detailed below.
Summary Description	Prepare detail designs for two pedestrian / cycle friendly bridges and associated access and landing areas at Lighterage Quay and Garras Wharf to create connections between Malpas Road and Newham, and as a result form the full Loop 1. This will include all required surveys, further consultation, final concept designs of a defined final option, technical designs to enable tendering, putting together and submitting 2no planning applications (one for each bridge and associated access provisions) including associated assessments, putting together tender packages for the two bridges and associated works, and preparing consent applications as required for the Environment Agency, Natural England and Marine Management Organisation.
Key Requirements	• Commission and collate all required surveys and data, including detailed utility and landownership searches, topographical and bathymetry surveys, contamination and geotechnical investigations, structural surveys of walls and structures that may be affected by the bridges and their access routes, ecological, landscape / visual and heritage surveys. • Produce final concept designs clearly defining the chosen operating mechanism, shape and form, materials and dimensions of the bridges. Provide options for operational management of the bridges, i.e. remote or local operation, responsibilities for operation and associated M&E requirements. Explore lighting requirements for bridges. • Consult with key stakeholders (including Harbour Authority, EA, NE, MMO, Truro City Council, Cornwall County Council) to obtain agreement on concept and support for proposals before proceeding to detail design. • Consult with the public and local residents on final exact bridge location of northern bridge and design. • Consult with Boscawen Parks Manager and Truro Boat Owners Association in regard to their specific interests on either end of the Lighterage Quay Bridge. • Consult with Tesco and landowner on landing point for northern bridge and how to resolve this with their car park operations. Develop proposals for that area with input from Tesco and landowner if possible. • Request a screening opinion from Cornwall Council to record with reasonable certainty that the bridges would not fall under the remit of Environmental Impact Assessment Regulations (bridges are not listed in either Schedule 1 or 2 of the EIA Regs, and the bridges under

	consideration are of small scale and are not associated with a large infrastructure project, so it is unlikely that any thresholds for EIA infrastructure projects would be met. The bridges do however affect sensitive areas, so a formal record of the screening process would be beneficial to this project). • Administer the planning application process including initiating pre-planning liaison and allowing for fees to pay for this early input from Cornwall Council and Natural England. Obtain pre-planning feedback and tailor any submissions and consent applications to suit. • Undertake all required assessments including ecological, landscape / visual and heritage impacts. • Produce up to 2no photomontages for each bridge, vantage points to be agreed with Harbour Master, adjacent residents, AONB and Cornwall Council planning authority. • Prepare one planning application per bridge and associated works with all required drawings and documents and allow for the planning application fee as part of the proposal. • Prepare technical designs including specifications for the bridges and associated access areas. • Prepare 2no detailed cost estimates and programmes of implementation – one for each bridge and associated works. • Research and discuss funding options and assist client in preparing appropriate funding bids. • Prepare tender packages for each bridge and issue over a relevant procurement channel (to be determined subject to contract value and likely funding model). Tender obtaining a separate price and programme for each bridge with a request from tenderer to provide price estimate and programme if both bridges were implemented as one package. • Evaluate tenders and advice on preferred tenderer. • Initiate required consent applications with EA, MMO and NE for implementation phase and advise on any licensing requirements. • Commissioning works. • Implementing works.
Key Outputs	• Surveys covering both bridge sites • Public Consultation Material including boards and feedback records • Finalised Concept Designs for Bridges to assist planning application • Technical Design Packages (one for each bridge) • Planning Application packages – one for each bridge • Tender Packages and Tender Reports – one for each

	bridge • Maintenance and Operations Report • Implementation Programme and Funding Options
Surveys required	• Topographical and bathymetry in 3D and CAD • Contamination and ground investigation • Landownership and utility searches • Ecology, landscape / visual, heritage, potentially arboricultural surveys for northern bridge Tesco side • Structural surveys of landing areas and river walls • Others as deemed to be required / advised by LPA / Harbour Authority / EA
Consents required	• Planning permission • Flood Risk Activity Permit from Environment Agency • Marine License from Marine Management Organisation • Consent for works (and potentially licenses depending on species / habitats affected) in SSSI / SAC from Natural England
Other Considerations	• Complex project that will require a multi-disciplinary team and likely to be engineering led with consideration of aesthetic and design requirements through landscape architect input • Good project management and planning skills required, which should include obtaining permits and consents for marine / river works.

Project 3 – Temporary Park & Float and Junction with Lighterage Quay and Loop 3 (Loops 1 and 3)

Project Area	Shown on Drawing CEC2999-03 and further detailed below.
Summary Description	This project aims to maximise the use of the boat storage area over the summer months, when there are only very few boats stored, so as to enable another ferry pickup and drop off point, provide car parking for use of Loops 3 and 5 (once implemented) and offer a cycling starting point for Loop 3 and connecting southern routes. Once the bridge is implemented, it will have great importance for acting as a central point for access to the overall Loops network and Boscawen Park, but it would also provide good functionality without the bridge.
Key Requirements	• Prepare a topographical survey for the project area. • Fully establish landownership. • Consult with Harbour Authority, Truro Boat Owners Association and Cornwall Council Highways Department, as well as businesses in Newham that use the affected junction and road for access. • Prepare a resolved concept plan that fully addresses car parking, access, materials and security, as well as improved and more visible access to Loop 3. • Consider and resolve ferry landing point and how to integrate this with the operation of the quay and access to the car park and Newham. • Prepare a transport / parking assessment and involve transport consultant in resolving any highways issues. • Prepare a planning application and submit this. Obtain planning approval. • Prepare cost plan and implementation programme. • Prepare technical design for approved plans and tender the works. • Evaluate tender returns and advise client on preferred tender. • Review funding options and discuss with client. • Assist client in defining operational and maintenance responsibilities. • Commissioning works. • Implementing works.
Key Outputs	• Resolved concept design • Technical design • Cost Plan and Implementation Programme • Tender package and tender report • Funding options appraisal
Surveys required	• Potentially ecological and tree surveys if any widening or modelling of banks proposed

	• Topographical survey in 3D and CAD for technical design
Consents required	• Planning permission likely to be required – check with Planning Authority once concept resolved • Approval from Cornwall Council Highways Department for junction modifications and new access into temporary car park • Agreement from Harbour Authority and Truro Boat Owners Association and some form of legal arrangement about use as car park between April and October
Other Considerations	• None

Project 4 – Garras Wharf Access and Link to City including Visitor Facilities (Loop 1)

Project Area	Shown on Drawing CEC2999-04 and further detailed below.
Summary Description	This project is primarily concerned with enhancing the link between Truro City and Truro River, as well as with the provision of new visitor facilities in a key location south of Morlaix Avenue to draw people through to this side and promote the southern Truro River area, including bike hire facilities.
Key Requirements	• Survey existing under-passes, footways and landscaping in detail. • Determine current responsibilities for maintenance and up-keep of under-passes. • Develop concept for the project area to address improvements and new visitor facilities and fully resolve with stakeholders. • If required, prepare a planning application and submit this. Obtain planning approval. • Prepare cost plan and implementation programme. • Prepare technical design for approved plans and tender the works. • Evaluate tender returns and advise client on preferred tender. • Review funding options and discuss with client. • Assist client in defining operational and maintenance responsibilities. • Commissioning works. • Implementing works.
Key Outputs	• Resolved concept design • Technical design • Cost Plan and Implementation Programme • Tender package and tender report • Funding options appraisal
Surveys required	• Potentially tree surveys if existing trees are affected • Topographical survey in 3D and CAD for technical design
Consents required	• Planning permission likely to be required if visitor centre is included or widening proposed – check with Planning Authority once concept resolved • Agreement with current owners and managers of under-passes • Agreement from Tesco if their wall is being enhanced or works done that affect them
Other Considerations	• None

Project 5 – Malpas Road Pedestrian / Cycle Improvements (Loop 1)

Project Area	Shown on Drawings CEC2999-05/1 to 05/4 and further detailed below.
Summary Description	The project deals with improvements to Malpas Road in terms of usability and safety for pedestrian and cycle users of a range of abilities. This would include creation of a continuous pavement from Malpas House to Boscawen Park, potential widening and material enhancements, different road surface materials at some junctions to provide visual signals to drivers to slow down, habitat and landscape enhancements, review of speed limit along some sections, formalising a pedestrian route from Sunny Corner to Malpas and designating the route as part of Truro River Area comparable to the Quiet Lane or Helford Area concepts.
Key Requirements	• Detailed survey of existing pavements and landscape strips, recording existing benches and street furniture. • Detailed landownership inquiries for full length of verges. • Develop concept for the project area to address improvements and fully resolve with stakeholders. • If required, prepare a planning application and submit this. Obtain planning approval. • Prepare cost plan and implementation programme. • Prepare technical design for approved plans and tender the works. • Evaluate tender returns and advise client on preferred tender. • Review funding options and discuss with client. • Assist client in defining operational and maintenance responsibilities. • Commissioning works. • Implementing works.
Key Outputs	• Resolved concept design • Technical design • Cost Plan and Implementation Programme • Tender package and tender report • Funding options appraisal
Surveys required	• Tree survey and input of arboricultural consultant to any path widening / new path and landscape proposals • Ecological survey for areas of new open spaces adjacent to river, and along informal footpath from Sunny Corner to Malpas • Topographical survey in 3D and CAD for technical design for areas proposed for works
Consents required	• Planning permission may be required – check with

	Planning Authority once concept resolved • Agreement with landowners, where verges are not owned by Cornwall Council • Cornwall Council Highways Department for any changes to Malpas Road, pavements and speed limits
Other Considerations	• None

Project 6 – Newham Road Review of Cormac Study (Loop 1)

Project Area	Shown on Drawings CEC2999-06/1 to 06/3 and further detailed below.
Summary Description	The project is about making Newham Road more accessible and safer, as well as improving its amenity, security and surveillance (including through means of natural surveillance and overall uplift of the area to deter some of the anti-social behaviour). It builds on third party projects tabled by others previously and would constitute and update and extension to these previous proposals.
Key Requirements	• Detailed survey of existing pavements and landscape strips, recording existing signage, benches and street furniture. Recording existing conflict areas in detail. • Review Cormac study and Newham BID proposals and meet with them to discuss options of updating and building on these. • Review and discuss with Newham BID issues of security and surveillance and develop proposals to address concerns. • Develop concept for the project area to address improvements and fully resolve with stakeholders. • If required, prepare a planning application and submit this. Obtain planning approval. • Prepare cost plan and implementation programme. • Prepare technical design for approved plans and tender the works. • Evaluate tender returns and advise client on preferred tender. • Review funding options and discuss with client. • Assist client in defining operational and maintenance responsibilities. • Commissioning works. • Implementing works.
Key Outputs	• Resolved concept design • Technical design • Cost Plan and Implementation Programme • Tender package and tender report • Funding options appraisal
Surveys required	• Tree survey and input of arboricultural consultant to path widening / new path and landscape proposals. Review of previous input from tree officers and incorporation as appropriate. • Ecological survey for new path and landscape areas. This may be more extensive, if a boardwalk solution along properties at Newham Road is revived – some early scoping and discussion required.

	• Topographical survey in 3D and CAD for technical design for areas proposed for works
Consents required	• Planning permission may be required – check with Planning Authority once concept resolved • Agreement with landowners, where verges are not owned by Cornwall Council • Cornwall Council Highways Department for any changes to Newham Road and associated pavements
Other Considerations	A boardwalk along the eastern side of properties has been mentioned during consultation for this study but is considered expensive and potentially difficult to implement. If a boardwalk solution is considered as part of this project, it should form an add on element, so as not to delay other simpler improvements.

Project 7 – Boscawen Park Visitor Facilities (Loops 1 and 2)

Project Area	Shown on Drawing CEC2999-07 and further detailed below.
Summary Description	The project includes delineation of the route from the bridge to the facilities and then on to Malpas Road, and integration of new visitor facilities in a proposed new building for Boscawen Park.
Key Requirements	• Source some funding to be able to buy design time to put into the development of proposals at Boscawen Park in conjunction with the Parks Manager. • Survey existing conditions and define most suitable route for pedestrians and cyclists to travel from bridge to Malpas Road. • Design improvements to that route including clear signposting. • Work with Parks Manager to incorporate visitor facility requirements into proposals for new building pursued by Parks Manager.
Key Outputs	• Design of route to connect bridge to Malpas Road using modifications to existing surfaces. • Design of visitor facilities as part of new building at Boscawen Park
Surveys required	• Site survey of existing situation to inform new route and input to building design.
Consents required	• Agreement by Parks Manager / Truro City Council to incorporate Truro Loops requirements into a future planning application for their new building.
Other Considerations	The Friends Group is currently inactive. There may be scope to revive it as part of Truro Loops to help push forward the overall Parks proposals and also help with considerations for habitat improvements and management of some areas for wildlife.

Project 8 – Boscawen Park River Embankment Improvements and Slipway Dredging (Loop 2)

Project Area	Shown on Drawing CEC2999-08 and further detailed below.
Summary Description	Key to this project is to design a suitable erosion defence along the western and northern river banks to control ongoing erosion problems. This should be in the form of continuation of the boulder solution along some of the southwestern edges, and backfilling with dredging material behind to claim back some eroded areas and create water edge / riparian habitat as well as retaining the land available for rooting of the tall northern conifers.
Key Requirements	• Detailed survey of western and northern banks and eroded areas – structural / engineering and ecological. • Preparation of a technical design for the line and height of the new erosion control defence, using granite boulders matching those previously used. • Preparation of dredging proposals for the slipway and depending on volumes for backfill required, for turning area and channel along Lighterage Quay. • Liaising with Environment Agency, Natural England, Harbour Master and Truro City Council Parks Manager. • Obtaining required consents and permission. • Tendering the works, evaluating tenders and tender report. • Commissioning works. • Implementing works.
Key Outputs	• Technical Design of Erosion Control Defence. • Tender Package and Tender Report. • Consent applications.
Surveys required	• Engineering and ecological site survey • Topographical survey to allow detailing of technical solution
Consents required	• Dredging permission • Flood Risk Activity Permit • Consent to proposals by EA, NE and MMO
Other Considerations	It should be explored whether these works including the design can be funded through existing Environment Agency funds as works are required to prevent ongoing erosion and resulting danger of contaminants leaking into the river system, as well as offering habitat creation opportunities and contributing to the long-term retention of a landmark open space in Truro.

Project 9 – Old Railway Track Bed Improvements and Link to southern Routes

Project Area	Shown on Drawing CEC2999-09 and further detailed below.
Summary Description	As part of this project it is envisaged to repair and in places improve surfaces along the old railway trackbed to make it more user-friendly to occasional cyclists, promote the route as a commuter route between Newham and Higher Town, and the City, and make potential links to southern wider area cycle routes and places more apparent.
Key Requirements	• Survey to identify detail areas for improvements. • Tree survey along areas to be improved and input to design of improvement measures, and to advise on vegetation clearance requirements in liaison with the ecologist and landscape architect. • Obtain input from ecologist and landscape architect for areas to be improved. • Produce technical design for improvements. • Tender works and produce tender report. • Commission works. • Implement works.
Key Outputs	• Technical design for improvements, including surfacing, picnic / resting area, interpretation, crossing point improvement and signage. • Vegetation clearance schedule.
Surveys required	• Condition survey • Tree and vegetation survey for improvement and selective clearance areas and input to any proposals that may affect trees • Ecology survey and mitigation / avoidance measures if required for improvement and selective clearance areas
Consents required	It is not envisaged that planning permission would be required for these works. The route is currently managed by Sustrans and Cornwall Council and these organisations need to be involved in proposal development and agree to proposals.
Other Considerations	Lighting does not form part of this project at this point in time. For ecological reasons, lighting is unlikely to be acceptable. Carefully designed and located lighting at crossing points or entrances could be considered if deemed necessary and would have to be added to a brief as required.

Project 10 – A390 Cycle Route and Crossing at Arch Hill Roundabout

Project Area	Shown on Drawing CEC2999-10 and further detailed below.
Summary Description	Key to this project would be creation of extra sections of cycle route in verges and potential widening of existing paths along the southern side of the A390 from County Hall to Arch Hill to create a continuous pedestrian / cycle connection along this stretch of busy road. Options for crossings at Arch Hill would form part of these considerations.
Key Requirements	• Establishing ownership of all existing paths and verges along southern side of road and liaising with owners and stakeholders. • Discussing proposals with Cornwall Council Highways team and working to get this part of the project included in the Cornwall Council 2030 Transport Strategy. • Utility searches and recording existing lighting and signage. • Concept designs for possible paths and associated required signage, lighting, crossing points and other features. • Obtaining agreement on a preferred concept. • Discuss and agree maintenance responsibilities / adoption of this route by the Council. • Producing detail designs for preferred option. • Obtaining planning permission. • Producing technical design. • Tendering the works, evaluating tenders and tender report. • Commissioning works. • Implementing works.
Key Outputs	• Concept design – 2 options and preferred option • Detail design for planning application • Technical design for tendering and implementation
Surveys required	• Topographical survey of all paths and verges at southern side of A390 • Ecology surveys • Tree surveys • Existing condition survey
Consents required	• Planning permission • Potentially road works permits during implementation
Other Considerations	This project will require full endorsement and support by Cornwall Council and adjacent landowners. If land is not owned by Cornwall Council, allowances for land purchase may have to be made. Future responsibility for maintenance of this part of the route should sit with Cornwall Council – this needs

	to be considered and achieved as part of the process. It is likely to have to happen as part of wider strategic road network proposals.

Project 11 – Interface between Loop 3 and Higher Newham Development, Link to Newham

Project Area	Shown on Drawing CEC2999-11 and further detailed below.
Summary Description	With the route here following proposed routes as part of the Higher Newham development, this project is largely about liaising with the Higher Newham developers to integrate and promote Truro Loops route 3 with their proposals. An additional link is shown from the main route through to Lighterage Hill – this requires further liaison and design to be implemented.
Key Requirements	• Continue contact with Living Villages (Higher Newham developer) and Duchy College (key future user at Higher Newham) to enable integration of Loop 3 into their proposed route network. • Discuss additional oink to Lighterage Hill further and produce concept plan. • Liaise with users at Lighterage Hill about this possible connection and obtain their buy in (via Newham BID). • Liaise with Cornwall Council Public Rights of Way officer about new and enhanced paths and how to formalise these. • If agreement for the additional link can be gained, produce a design. • Discuss and agree possible funding for this additional link. • Tendering the works, evaluating tenders and tender report. • Commissioning works. • Implementing works.
Key Outputs	• Agreement from Living Villages and Duchy College to promote Loop 3 route through their development and to establish an additional link. • Concept design. • Detail design.
Surveys required	• Potentially topographical survey for link at Lighterage Hill • Potentially ecology survey depending on new route and crossing point
Consents required	• Potentially planning consent for new link – discuss with Cornwall Council planning department at the outset • Agreement from Living Villages, Duchy College and Newham BID / adjacent businesses • New permissive path
Other Considerations	None

Project 12 – Masterplan for Lighterage Quay

Project Area	Shown on Drawing CEC2999-12 and further detailed below.
Summary Description	A masterplan for this southern end of Newham could open up substantial benefits to Newham as a whole by providing a new high quality destination and enhancing the value of this area including encouraging new users and businesses.
Key Requirements	• Undertake all necessary surveys and data searches. • Prepare a draft masterplan for Lighterage Quay and Loop 5 area. • Liaise with all stakeholders and particularly Harbour Authority, Newham BID, businesses in the project area, the Rhoda Mary Project, South West Water and Truro Boat Owners Association, and obtain their support for a masterplan. • Liaise with Cornwall Council and Truro City Council about integrating the masterplan with the local Development Plans. • Undertake a public consultation. • Prepare a development strategy for the project area and agree with stakeholders. • Investigate funding and implementation options. • Prepare a final masterplan and strategy document, along with an implementation and funding strategy.
Key Outputs	• Masterplan and development strategy document • Implementation and funding strategy
Surveys required	• Ecological surveys • Landscape and visual survey • Tree survey • Business user / harbour user survey
Consents required	• None at masterplanning stage
Other Considerations	This plan and strategy would have to be linked into the Development Plan for Truro and Cornwall, to have Lighterage Quay recognised as a destination for leisure and business users alike.

Project 13 – Experiencing Truro - Creating the City Loop 4

Project Area	Shown on Drawing CEC2999-13 and further detailed below.
Summary Description	This is a project for a study and detailed proposals to be prepared as to how this loop could be created. It is largely envisaged to be focussed on better interpretation, materials and art installations, localised urban improvements, as well as route guidance and signage including in the branding of the Truro Loops and as a historic and educational route through Truro.
Key Requirements	• Design Study to clearly define Loop 4 and points of intervention and improvements, linking to guidance and branding developed as part of Project 1. • Designs for points of intervention and improvements. • Consultation – stakeholder and public. • Implementation and Funding Strategy.
Key Outputs	• Design Study and Designs • Implementation and Funding Strategy
Surveys required	• Detailed condition survey of Loop 4 including existing signage, street furniture, features
Consents required	• None at study stage, likely to require agreement from Truro City Council • Check with Cornwall Council planning department whether any approvals are required once study has defined scope of details / interventions
Other Considerations	None

Project 14 – Malpas and Moresk Forest – Creating Loop 6

Project Area	Shown on Drawing CEC2999-14 and further detailed below.
Summary Description	A key point of this project is to promote and enhance existing routes and add selected new sections to make the overall loop more user-friendly and accessible to cyclists. A large section of this loop is over private land, and whilst initial conversations have been had and agreement in principal obtained, this needs to be formalised and fully agreed as part of this project. The project also encompasses potential improvements between Sunny Corner and Malpas. Consultation with and involvement of Malpas residents will be a key part of this project.
Key Requirements	• Undertake detailed surveys of the proposed loop, including the new section on private land and the informal undesignated path along the estuary. • Prepare a draft concept proposal to implement the loop illustrating any required works including new and improved routes, interpretation and signage. • Liaise with Cornwall Council Highways about speed limit reduction along Malpas Road from Sunny Corner to Malpas. • Liaise with Cornwall Council Public Rights of Way officer about new and enhanced paths and how to formalise these. • Explore funding options and consider future maintenance.
Key Outputs	• Fully designed loop proposals showing enhancements, new sections and locations for interpretation and signage • Implementation and funding plan
Surveys required	• Existing condition survey for whole route • Ecology survey for areas where modifications are proposed and along estuary • Tree survey for areas where modifications are proposed and along estuary • Possibly topographical surveys for areas where works may be proposed
Consents required	• Agreement of private landowner • Creation of a new permissive path
Other Considerations	Depending on options for path along estuary, Natural England may have to be consulted.

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10.3.3. Project Concept Plans

See separate pdf files in Volume 01 Appendices – App10-3-3.

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10.3.4. Bridge Drawings and Risk Register

See separate pdf files in Volume 01 Appendices – App10-3-4.

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10.3.5. Technical Considerations for Bridges

Key Components

Key components include the longitudinal and transverse beams, the lifting mechanism and bearings.

The specification of the longitudinal and transverse beams will need to be carefully considered at the preliminary design stage. Currently the use of a fabricated box section for the longitudinal beams is proposed, formed from weathering steel. Weathering steel is proposed as it will be difficult to provide access inside the box for inspection and to replace any corrosion protection. The outside of the longitudinal steel could still be painted to meet planning requirements.

Even if the ends of the fabricated box are sealed, moisture will eventually build up on the inside of the box. Therefore it would be prudent to incorporate drainage holes within the box which can also be used for inspection using a boroscope or endoscope.

Traditionally the performance of weathering steel could not be guaranteed for locations close to coastal waters. At the preliminary design stage detailed consultation will need to be undertaken with specialists and the future bridge owner regarding the exact corrosion protection strategy for the steelwork.

Rolled hollow sections are currently shown for the transverse beams. Whilst rolled sections in weathering steel are available they may not be cost effective for small quantities.

At subsequent stages in the project further development work will need to be undertaken on the lifting mechanism of the bridges. Whilst the procurement of the final lifting mechanism would be via a performance specification it will be important to ensure that sufficient spatial allowance has been made. A specialist in this area would need to be appointed as part of the bridge preliminary design team.

Further development work will also be needed on the bearings. Preliminary analysis will need to be undertaken to determine the forces and rotations for each bearing, including the pin rotation bearing connection for the deck and counterbalance beams to the masts. A bearing replacement strategy will also need to be developed as the bearings will need to be renewed several times over the design life of the bridges.

Implementation Strategy & Technical Approval

Overview

All bridges that are used by the public in the UK have to be designed in accordance with the

Design Manual for Road and Bridges (DMRB), produced and managed by Highways England. Within the DMRB (Standard BD2/12) is a requirement for Technical Approval of any new design before detailed design commences. Proposals are set out on an Approval in Principle (AIP) form and submitted to a Technical Approval Authority.

BD2 also has a requirement for an independent check of the design, the level of detail is based on a category reflecting the complexity of the design. Opening bridges are almost always Category 3 which requires a design check by a completely independent consulting engineer. Design and Check certificates complete the Technical Approval process.

Technical Approval Authority

By definition a Technical Approval Authority (TAA) must be technically competent and the usual choice is either the eventual owner or another consulting engineer acting on behalf of the owner. The decision of who should be the TAA begs the question of the role of Cornwall Council (CC). Noting that the Loops Project meets the Council's policy aspirations in terms of encouraging walking and cycling and is cited in local planning documents, it seems likely that CC may be interested in adopting the routes and hence the bridges, adding them to the CC Bridge Stock. It should be noted that CC already have one opening bridge to manage, the Ross Bridge in Penzance.

Should CC accept this position, it is suggested that the CC Chief Bridge Engineer is consulted as early as possible in order to prevent abortive design work.

Independent Check

As noted above, BD2 requires an independent check of the designs. A Category 3 Check is as complete an analysis as the design itself and it should be noted that additional professional fees should be included in the global project budget.

Inspection & Maintenance

Part of the designer's responsibility for the bridge is to produce as-built records and a maintenance manual. This will apply equally to the structural engineering elements of the bridges and the mechanical and electrical engineering machinery of the opening mechanisms. Regular servicing of the machinery at specified intervals is essential in ensuring the continued smooth operation of the bridges. The worst case scenario is having a bridge stuck either in an open or closed position through lack of maintenance.

With regard to the structural elements, the bridges are reasonably straightforward and no provision for specialist access need be incorporated in the structures. General Inspections may be best carried out simply on foot and are intended to ensure that no significant

defects have arisen since the last inspection. Principal Inspections, however, require all parts of the bridge to be inspected from within touching distance and these will require a boat for inspections of the substructure and deck undersides at an appropriate level of tide and some form of elevated platform to inspect masts and counterbalance beams. The latter will require a closure of the bridge during these activities, but inspections could take place at night if a daytime closure was unacceptable.

The most significant maintenance intervention in the lives of the bridges will be associated with the protective coatings of the steel sections. This will depend on the finish chosen for the steel members: weathering steel, if permitted on the grounds of aesthetics or environmental constraints, would be almost maintenance free. If, however, a paint system is eventually specified then the initial choice should be one of maximum life before repainting – typically up to 30 years with recent developments in paint technology. That said, achieving the 30 years can be dependent on regular touching up to prevent minor defects from spreading.

Another planned intervention will be on the deck surfacing which must be maintained at a high level of skid resistance for use by walkers and cyclists. The chosen finish to the steel deck plates should have a long life, as long as it is first applied in dry conditions. This would be guaranteed if the material was applied in the steel fabrication works.

Other major interventions in the 120 year life of the bridges may include bearing replacement which will require localised temporary supports and the deck being jacked up to allow old bearings to be removed and new ones installed. However, with only very low live loads and little horizontal movement, there may well be no need to replace bearings at all.

As well as planned maintenance, there will also be a need for reactive works in the event of a component failure or as a result of outside party actions such as accidental damage, vandalism and graffiti. This emphasises the point of regular inspections and a system whereby members of the public know who to contact if they identify a problem.

The bridges will require some form of barrier to prevent pedestrians and cyclists attempting to cross at any stage of the opening and closing process. Systems not dissimilar to railway level crossings are generally employed with flashing lights and warning bells that need to be triggered in advance of the barriers dropping and the bridge opening. A detailed operational procedure will need to be prepared but attention is drawn at this stage to the need to make allowance in capital and operational budgets.

Current best practice for the maintenance of bridges may be found in the UK Bridges Board

Code of Practice for the Management of Highway Structures. All bridge owners should comply with the guidance in this document which is based on sound asset management principles. Should Cornwall Council adopt the bridges, they will undoubtedly comply with the Code.

Inspections should be in accordance with DMRB BD63 and preferably undertaken by Inspectors who have passed the Bridge Inspectors Certification Scheme. General Inspections should be carried out every two years, with a Principal Inspection every six years. The latter should be undertaken by a Chartered Engineer who should access all parts of the structure within touching distance. This may require inspections from a boat for the deck undersides and with the use of a cherry-picker lifting platform for the masts and counterbalance beams. This activity will require short term closures for safety reasons.

All maintenance requirements of the bridges will need to be incorporated into a maintenance manual which should prescribe routine maintenance tasks and other interventions during the life of the bridge. In an ideal world all maintenance will be planned but it must be recognised that there will be occasions when reactive maintenance is required for example as a result of accident damage, vandalism of graffiti.

The mechanical and electrical equipment needed to open the bridges will require a more detailed manual to indicate the servicing requirements and will be produced by the company that designs the machinery.

Construction & Buildability

Phasing

It would seem unlikely that the whole of the Loops Project will be built at the same time and it is likely to be phased. Irrespective of other issues, it is recommended that the two bridges are built at the same time to benefit from economies of scale in terms of off-site fabrication and effective use of heavy plant.

Form of Contract

The Engineering Construction Contract is recommended but there are a number of options in terms of payment methods and risk sharing. The selection of contract option will need to be made at a later date.

Early Contractor Involvement

In recent years, some civil engineering projects have benefited by the appointment of a contractor at an early stage of the design process to assist in the detailed design, member detailing and/or choice of material types in the hope of reducing construction costs. Any

potential cost saving, however, is partly offset by the contractor's staff costs during this phase.

Buildability

Piling could be carried out from jack-up barges and there is local expertise in this area from Seacore Ltd. based at Falmouth and now part of the Fugro group. If precast concrete crossheads are preferred, there is an excellent pre-casting company, Cornish Concrete Products Ltd. at Bissoe. The steel deck would need to be prefabricated and transported to site in sections for final assembly but choice of size and siting of craneage will need careful consideration. The final selection of specialist sub-contractors will be made by the main Contractor against a prescribed specification for the elements.

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10.3.6. Outline Cost Plan

See separate pdf files in Volume 01 Appendices – App10-3-6.

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