

TRAMWAY ASSET MANAGEMENT PLAN

PART 2:



Tramway Asset Management Plan

PART 2

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1. Introduction

Scope

This document relates to the Blackpool and Fleetwood Tramway – referred to herein as the Tramway. In order to ensure that the Tramway system continues to operate into the future, its ongoing maintenance and renewal requirements need to be placed on a sustainable footing. Although having a relatively new system provides a head start, maintenance issues are emerging and a strategy and plan to deal with these is required.

Drafted in the spring of 2022, this document sets out the Council’s tactical approach for management and maintenance of the Tramway’s infrastructure assets. The document will neither be a static nor an isolated document. It will form a link between the Tramway Asset Management Strategy and the actual delivery of Tramway maintenance services. It will provide a framework which can be reviewed continuously to take into account changes in strategy and procedures.

This Tramway Asset Management Plan (TAMP) sits within a defined Tramway Asset Management Framework, which is described in full in Section 6 of the Tramway Asset Management Strategy (TAMS).

The TAMP will include details on the following:

- Section 2: Data Management
- Section 3: Communications
- Section 4: Performance Management
- Section 5: Maintenance Methods
- Section 6: Safety and Risk Management
- Section 7: Resource Management
- Section 8: Lifecycle Planning and Forward Works Planning

The final section describes the Action Plan associated with this TAMP.

This document is subject to annual review and update as required.

A Brief Description of the Tramway

The Tramway runs from Blackpool Starr Gate to Fleetwood Ferry and includes the spur to North Station. It is located within the boundaries of two local authorities, Blackpool Council, referred to herein as the Council, and Wyre Council. By agreement with Lancashire County Council, the authority responsible for transport services within Wyre Council, Blackpool Council’s department of Highways and Transportation Track Services (herein referred to as Track Services (TS)) undertake the maintenance of the entire Tramway permanent way, including that located within Wyre Forest.

Blackpool & Fleetwood Tramway is owned by Blackpool Council (BC) and operated under licence by Blackpool Transport Services (BTS). BC and BTS work in close partnership

to ensure the continued safe delivery of a unique tram experience that conveys an annual patronage of circa 5.5million passengers.

A diagrammatic map of the Tramway is reproduced in Appendix B of this TAMP.

Related Documents

This document has been developed and should be read in conjunction with the following documents:

- Blackpool and Fleetwood Tramway Asset Management Strategy
- Blackpool and Fleetwood Tramway Operating and Maintenance Agreement
- Track Services Engineering (Tram) and BTS (Tram) Safety Management Systems
- Tram Track Handbook
- Overhead Lines Maintenance Manual
- Safety on the Line
- Blackpool Council Maintenance Boundary Commentary
- Business Continuity Plans
- Work Activity Plans
- Blackpool's Road Asset Management Strategy
- Lancashire County Council's Transport Asset Management Plan
- Lancashire County Council's Highway Management Plan.

2. Data Management

2.1 Aims and Objectives of Asset Data Management

Good asset management is only possible with good data. Investment decisions are not effective or sustainable unless the Tramway managers know what assets it is responsible for and what condition it is in. The objectives of asset data management are therefore to:

- Maintain the TS Enterprise Business Flow (EBF) system as the single source store for all assets on the permanent way.
- Maintain the BTS processes and records used to manage the Fleet and Fleet infrastructure.
- Ensure that the stores for asset data are secure but with easy-to-use access to suit asset data management requirements.
- Ensure that the stores of asset data provide a reliable and easy to use format of up-to-date asset data and allow effective and efficient upload of new or amended data.
- Review the quality and accuracy of the data and develop and implement a plan to improve the data where required.
- Accurately and consistently reproduce and report asset data as required; and
- Ensure that data can be used consistently and accurately to support the following:
 - decisions on future data requirements
 - financial reporting requirements such as valuations
 - maintenance works requirements
 - performance analysis
 - asset lifecycle analysis processes
 - evidence and risk-based decision-making processes for routine and capital investment and budget setting
 - the Tramway Asset Management Strategy.

2.2 Core Asset Data - Inventory and Condition

The core data required for and relevant to Tramway asset management relates to inventory and condition of the infrastructure asset groups shown below.

The Tramway is a hybrid system which is divided into three types of operation all operated by Line of Sight:

- a) Reserved Track (ballasted or segregated area)

The reserved track section runs between Cabin and Fishermans Walk at a maximum speed of 50 kph. There are several highway junctions along the

system which are controlled through LRT signals operated by “Elektroline” ground transponders and tram transponders connected to the highway signal system to allow the trams priority and safe passage through the junctions.

b) Highway (shared with other vehicles and pedestrians)

The street section runs between Fishermans Walk and Bold Street in both directions, at a maximum speed of 30kph, normal road traffic rules apply. Trams are classed as motor vehicles on a road and as such are subject to the same Road Traffic Regulations as other road users. Tram drivers are trained in defensive driving techniques to minimise the risk of collision. Trams are given priority at road junctions, triggered by on board and trackside transponders.

c) Shared Area (area shared with pedestrians and occasional vehicles)

The track between Cabin and Starr Gate is subject to a maximum speed of 30kph.

A full description of the assets maintained by Track services is detailed in Section 5.4 of the Track Services SMS. These can be broadly categorised as follows:

- Permanent Way - Plain Line (including sleepers and ballast)
- Permanent Way – Points, switches and crossings
- Platforms and associated furniture
- Drainage systems
- Signs
- Fencing
- Overhead Line support poles
- Depot building exteriors and depot yard outside the buildings (excluding boundary fencing)
- Station Structures (e.g. Bispham Station, Little Bispham, buildings north of Thornton Gate, small outhouse just south of Stanley Road)

The asset inventory and condition data is obtained from historical data records, inspections and surveys and, for new developments, from as-built data.

A full description of the assets maintained by BTS is detailed in the BTS SMS. These can be broadly categorised as follows:

- Rolling Stock (18 No. (Bombardier Flexity2), B-Fleet and Heritage Fleet Trams)
- Starr Gate Depot & Rigby Road Tram Depot (including boundary fencing but excluding building exteriors and depot yard outside the buildings)
- Overhead Line (OLE) – cables and support arms
- SCADA (Comms) between platforms
- Signals
- Traction power substations and distribution network
- Tram Detection System (TDS) signalling electrical and electronic systems
- Ticketing vending machines

The depots at Starr Gate and at Rigby Road house the following facilities:

Rigby Road Depot	Starr Gate Depot
<ul style="list-style-type: none"> • Depot Control Room • Equipment rooms • Offices • Staff facilities • Workshops, (vehicle & electrical) • Training rooms • Stores • Stabling roads 	<ul style="list-style-type: none"> • IT room • Offices • Staff facilities • Repair workshops • stores • Stabling roads • Tram wash • Sanding plant • OHLE maintenance area

2.3 Inspections

2.3.1 Track Services / Permanent Way Inspections

Inspectors are responsible for identifying defects. In general, visual inspections, aided by the use of an electronic hand-held devices, are used to assess the condition of the track components. Inspectors walk the track and inspect each line separately and also take account of associated off-track items. Inspection procedures and defect recording and rectification timescales are detailed in the Tram Track Maintenance Handbook.

Defects are logged on the device, categorised and photographed. A schedule of works is then produced for operatives to carry out the repairs. Where the repair period is one month or less, a weekly report is produced from the Enterprise Service Builder (ESB) system which shows the number of defects recorded and the percentage of those completed.

A – Permanent Way Inspections

Asset	Type of Inspection	Frequency
Rail - Plain Line, Switches & Crossings	Safety Tours	As per Track Services SMS
	Maintenance Inspections	As per Tram Track Maintenance Handbook
	Specialist Testing – gauge and twist	Annual
OLE Poles	Inspections concurrent with rail inspections	
Platforms & associated furniture	Inspections concurrent with rail inspections	
Fencing & Signs	Safety Tours concurrent with rail inspections	

It is noted that a **Digitised Visual Condition Survey** of the entire permanent way is due to be undertaken in 2022. Digitised Visual Condition Surveys are undertaken from a trolley moving at approximately 30 mph. The surveys take photographs of the surface of the Tramway permanent way at 1m intervals from a number of different angles and processes these images to produce a BIM map of the condition of the surface of the Tramway. This technique has been accepted by DfT for roads for use as a network condition indicator and can be used to as the primary feed to a programme of works.

The above formal inspections are supplemented by reports from BTS tram drivers and the public. Reports of defects from these informal inspections are entered into the EBF fault reporting system as if they had been identified through formal inspection.

2.3.2 BTS Inspections

B – Fleet Inspections

Asset	Type of Inspection	Frequency
Rolling Stock	Each tram has 12 inspections annually, this consists of: <ul style="list-style-type: none"> • 1 monthly x 8 – which mainly visual and takes 3-4 hours • 3 monthly x 2 – which is slightly more involved and takes 5-6 hours • 6 monthly x 1 – more in-depth inspection and takes 6-8 hours plus tyre turning 15 hours • 12 monthly x 1 – replacing oils, cleaning ,painting and re-greasing parts, testing & checking units and can take 6-8 days plus 15 hours tyre turning 	
Depots	Given that each of these assets has only been operational for approximately 10 years, there is currently no regime of routine inspections other than as noted below. However Inspections are carried out by BTS (eg Mott MacDonald have been contracted for detailed OLE inspections in 2022 and arrangements are being made for inspection of the SCADA system). A more systematic regime of inspections will be developed as the assets age.	
Sub-Stations		
OLE / Traction Power		
Signalling Systems		
SCADA		

BTS OLE staff work to a monthly and annual inspection plan. The Overhead Line Maintenance Manual provides details of the activities to be undertaken by OLE staff. A walk through of the whole circuit is undertaken on foot on a monthly basis. Each individual piece of equipment on the overhead line is checked and tested annually. The OLE heights and stagger measurements are also undertaken annually.

In addition to monthly and annual maintenance checks there is a daily drive through which involves a visual inspection of anything obvious especially after/during high winds regarding possible damage to the Bowspan assembly. The daily drive through includes a visual inspection of the OLE parts, insulator sections and frogs. There is also an inspection 2 to 3 times a week of the pantograph skates and track greasing

The wear and condition of frogs and section insulators are monitored on average 3 times a year with the readings recorded on the inspection sheet. The bypasses are checked for wear on the sections and adjusted or changed, if necessary, as are the frog bypasses. The frogs are rarely changed as the trolley wheels of the heritage trams run on those and these trams are now used less frequently.

Other tasks include a monthly inspection and clean of the Starr Gate and Rigby Road depots sections and frogs. Every four months there is an inspection and clean of

the main line frogs and sections and every twelve months Rigby Road sections are changed.

The Tramway Manager via the Tramway Technical Manager, Vehicle Technicians and Cleaning Team is responsible for tram maintenance. Maintenance schedules detail the frequency and content. BTS have devised these schedules, based upon the original maintenance specifications put forward by the manufacturer. The schedules evolve as experience is gained. The Vehicle Technician examines weekly all instances of component failure and unplanned work to monitor emerging trends.

Daily inspections cover the reliability of the main safety systems of the vehicle before they take up service on the tramway. These checks are carried out principally by the drivers. Items included are running gear, lights, horns, door operation, pantograph carbons and tram stop equipment.

Maintenance work is recorded manually. Inspection sheets are completed by the person(s) carrying out the work. Any defects are recorded on a fault sheet. The inspection and fault sheets are reviewed by the Infrastructure Manager who allocates any necessary remedial works and then records the inspection as complete.

2.4 Data Storage & Reporting (Asset Management System (AMS))

Track Services Tramway Asset Management System

Since 2009, the BC Tramway asset data has been held on an Enterprise Business Flow system (EBF). Originally developed in-house, the IT aspects of the system are now managed by Pentangle. It is currently being used for the following purposes:

- Storing asset inventory and condition data
- Managing the BC Tramway inspection regime
- Fault Reporting System
- Issuing & recording works orders
- Record-keeping for audit purposes
- Managing customer information

Condition, fault and repair information is entered into the system by Track Services. Basic inventory information and new fields, as will be required by the addition of the extension of the Tramway network to North Station, are entered and managed by Pentangle.

BTS Asset Management System

Under the terms of Clause 22 of the Blackpool and Fleetwood Tramway Operating and Maintenance Agreement, BTS are required maintain an asset management system.

The Asset Management System (AMS) held by BTS is a paper system. There are no current plans to implement an IT based AMS.

2.5 Data Flow

To ensure that the data held is accurate and up-to-date and to then ensure that the data is used effectively requires the flow of data within and across the various Tramway asset management processes to be defined. Existing data flow processes were mapped in 2009. These processes include, but are not limited to the following:

- Recording of information regarding new assets.
- Recording of information related to renewal or replacement of old assets.
- Review the robustness of existing asset data.
- Use of core data for reporting performance indicators.
- Use of data in financial purposes such as valuation and Lifecycle modelling.
- Use of data for strategic planning of investments.
- Use of data within planning, design and implementation of maintenance works, both revenue and capital.

2.6 Asset Performance & Data Review

Performance reports will be made available to senior decision makers, including the Tramway Infrastructure Improvement Committee at the frequencies detailed in Section 4 Performance Management and, in particular, as part of an annual strategic investment planning process.

The review process will identify any gaps in the data and the strengths, weaknesses, opportunities and threats to the service and action plans will be developed as required. Lessons learnt concerning the collection and management of data will be documented and used to refine Tramway strategies and plans

3. Communications

3.1 Aims and Objectives

Unless otherwise stated, all communications relating to the Tramway will be directed through BTS as the nominated operator of the Tramway.

Our Communication aims to provide clarity and transparency in the approach to both Tramway Infrastructure Asset Management and Tramway maintenance service. At the heart of all communications will be what we are doing, why we are doing it, and the investments involved, to build trust and to inform.

This Communication Strategy will be reviewed annually and updated as required to ensure effective mechanisms to communicate service standards and outcomes are in place to manage customer expectations.

The following core principles will be followed:

- **Regular accurate and consistent updates** providing up-to-date information about Tramways matters, with a continual drip feed of content around investment and improvement into our network, ensuring customers are informed and aware of the process and the year-round work of maintaining our highway assets.
- **Plain and easy to understand jargon free language** so that customers with no Tramway knowledge are able to understand and be engaged.
- **Honest, clear and simple communications** will be delivered even where difficult messages are required; for example, should schemes fall behind due to bad weather or other unforeseen circumstances, we should tell our customers. This will help demonstrate that the asset management approach is the most effective solution, and offers good value for money
- **Transparent communications** about how decisions are made in relation to the identification, assessment, programming, delivery and completion of asset management activities including maintenance works and how people are involved in making decisions for the service. This will allow customers to understand the position and the rationale behind decisions
- **Timely and pro-active communications** in advance of any works taking place and in line with the Council's decision-making process
- **Customer focused and listening** to ensure the information is used to help drive service improvement
- **Safeguard and maintain** the reputation of Blackpool Council
- Our ambition for Blackpool should continually shine through everything we say, along with our commitment to provide communications in an informative, accurate and effective manner

The objectives of Tramway communications are:

- To inform customers of the services the Tramway provides and the quality of service they can expect
- To demonstrate the positive work being carried out to maintain and improve the Tramway network
- To communicate efficiently and signpost on where to find further information for significant schemes and works
- To engage and listen to people’s concerns about the network and feedback our progress on a regular and timely basis
- To work collaboratively across internal departments and with external partners to ensure that communications are as informative as possible, consistent, factually sound and easy to understand
- To help customers understand how they can report Tramway issues, influence and help shape the work

3.2 Tramway Stakeholders

The Tramway is of significant interest to the public and to the media, not just in respect of the timetable of services, but also in respect to how the network should function and how it should be managed. Engagement with stakeholders is essential to keep them informed, provide mutual understanding, meet legal obligations, manage expectations and ultimately improve customers satisfaction of the highways service.

Stakeholders are considered during the planning and delivery of services and the maintenance works. The Tramway team will seek to engage and inform as many people as possible from across the Town.

The following tables, which will be reviewed annually, show our customers and the most appropriate means of communication.

Table 1: Internal Stakeholders

Customer Group	Includes	Method of Communication
Elected Members	<ul style="list-style-type: none"> • Leader of the Council • Deputy Leader of the Council • Portfolio holder for Transportation 	<ul style="list-style-type: none"> • Direct communication • Face-to-face meetings • Council meetings • Briefing notes • Reports • Presentations at committees • Email • Councillor Net
Ward Members	<ul style="list-style-type: none"> • All other Blackpool 	<ul style="list-style-type: none"> • Direct communication

Customer Group	Includes	Method of Communication
	Council/LCC Councillors	<ul style="list-style-type: none"> • Meetings • Presentations at committees • Email • Councillor Net
Constituency Committees		<ul style="list-style-type: none"> • Meetings • Direct communication • Reports • Briefing notes • Presentations at committees • Digital channels • Email
Community Committees		<ul style="list-style-type: none"> • Local media • Blackpool publications • Digital channels • Constituency Teams • Councillors and Community Voluntary Groups
BC Departments	<ul style="list-style-type: none"> • Blackpool Illuminations • Coastal Defence • Visit Blackpool 	<ul style="list-style-type: none"> • Direct communication • Meetings • Email
BC employees engaged in Tramway issues	<ul style="list-style-type: none"> • BTS • BC Highways 	<ul style="list-style-type: none"> • Email • Telephone • Staff newsletters • Staff Intranet • Managers brief
Customer Contact Centre		<ul style="list-style-type: none"> • Direct communication • Email • Telephone
Service Providers		<ul style="list-style-type: none"> • Direct communication • Meetings • Email
Chambers of Commerce		<ul style="list-style-type: none"> • Council meetings • Local media • Blackpool publications • Digital channels

Table 2: External Stakeholders

Customer Group	Includes	Method of Communication
Blackpool residents		<ul style="list-style-type: none"> • BTS Website & BPL App • Tramway stops • BTS printed timetables • Local media • Blackpool publications • Digital and social media channels • Constituency teams • Councillors and Community Voluntary Groups • Newsletters • Letters from Council / contractors • Tramway Signage • Public Notices
Tramway users	<ul style="list-style-type: none"> • Schools • Businesses • Commuters • Visitors to the Town 	<ul style="list-style-type: none"> • As Blackpool Residents
Property owners	<ul style="list-style-type: none"> • All those who live on the borough 	<ul style="list-style-type: none"> • As Blackpool Residents
Contractors & consultants		<ul style="list-style-type: none"> • Direct communication • Meetings • Email
Lancashire County Council	<ul style="list-style-type: none"> • LCC Highways • Lancashire Enterprise Partnership 	<ul style="list-style-type: none"> • Direct communication • Meetings • Email
Wyre Council		<ul style="list-style-type: none"> • Direct communication • Meetings • Email
Environment Agency		<ul style="list-style-type: none"> • Forms of agreement • Emails • Meetings
Other local transport operators	<ul style="list-style-type: none"> • Railway companies • Taxi firms 	<ul style="list-style-type: none"> • Forms of agreement • Emails • Meetings
Local communities and community groups		<ul style="list-style-type: none"> • Local media • Blackpool publications • Digital channels • Reports via the online system • Meetings
Schools/colleges	<ul style="list-style-type: none"> • All schools and colleges in Blackpool 	<ul style="list-style-type: none"> • Direct communication • Reports via the online system • Letters • Email

Customer Group	Includes	Method of Communication
Local businesses		<ul style="list-style-type: none"> • Local media • Blackpool publications • Digital channels • Blackpool Chamber of Commerce • Shopping Centre Management • Reports via the online system
Members of Parliament (MPs)		<ul style="list-style-type: none"> • Local media • Blackpool publications • Digital channels • Email
Interest groups	<ul style="list-style-type: none"> • Pedestrian groups • Cycling and motoring groups • Disability and mobility groups 	<ul style="list-style-type: none"> • Local media • Blackpool publications • Digital channels • Constituency Teams • Councillors and Community Voluntary Groups • Meetings • Email
Emergency services	<ul style="list-style-type: none"> • Police • Fire • Ambulance • Health service 	<ul style="list-style-type: none"> • Meetings • Emails • Digital channels
Utilities	<ul style="list-style-type: none"> • Gas • Water • Electricity 	<ul style="list-style-type: none"> • Meetings • Emails • Digital channels
Office of Road & Rail / RAIB		<ul style="list-style-type: none"> • Meetings • Emails • Reports
UKTram		<ul style="list-style-type: none"> • Meetings • Emails
Department for Transport (DfT)		<ul style="list-style-type: none"> • Forms of agreement • Emails • Meetings

3.3 Messaging

To achieve our objectives, we will communicate through a number of channels.

Major projects will be planned out in advance, working with the Tramways team and contractors to ensure that all customers have advanced warning of any works or temporary disruption. The long-term benefits of the schemes will be promoted. Major project updates on how works are progressing will be issued at timely intervals taking the customer on the journey from the start to end of the project. Where major projects are led by strategic partners, Blackpool's communications team will support to cascade messages out on a local level.

Day to day maintenance work also needs to be communicated to our customers. News content is also shared with local media and added to the BTS website at the start of new programmes of work.

The BTS website will be the main hub of information and the main channel for customers to report issues and engage with the Tramway team. For those unable to access online reporting systems either through mobile or PC, the BTS customer service team will be fully briefed on programmes of work to answer any enquiries.

All relevant policy, standards, service and project information will be published on the BTS website and reviewed regularly as appropriate. By working with IT staff within the Council we aim to ensure that uploaded documents are accessible for all readers, providing contact information if readers require a different format, for example those compatible with easy read devices. Audio and text will be used in videos to describe Tramway activity and promoted on digital channels.

Social media and press media enquiries will be answered quickly to provide accurate information, liaising where appropriate with contractors and partners and directing to further information on the Blackpool Council website.

Engaging with customers can be mutually beneficial; the Tramway team understand the needs and expectations of customers needed to determine and help shape BC's transport services.

Strategic, tactical and specific messages will be communicated.

Strategic messages

Clear and accurate information will be made available through key messages to customers to ensure they understand how the council:

- Focus on safety
 - Safety is the foremost issue for the maintenance and operation of the Tramway.
- Deliver services
 - We are committed to investing in, maintaining and improving the Tramway

to deliver an innovative and forward-thinking network

- Plan and select works
 - The council takes an asset management approach to Tramway maintenance by specifying the right treatment in the right place, at the right time to ensure that the asset delivers the required expected level of service and life expectancy and aims to therefore reduce the need for more costly reactive repairs
- A sustainable network
 - We want a Tramway service that is fit for the future, that leads the way in its response to the climate emergency and is environmentally friendly
- Produce works programmes
 - The council carry out inspections to plan for future works to ensure that maintenance is consistently carried out in a planned and coordinated way
- Integrated
 - Our Tramway services and activities will be integrated where possible with other modes of transport in Blackpool to provide customers with choice.

Tactical messages

Clear and accurate information about current activities and feedback, which fall under the categories:

- Planned maintenance to enhance or replace existing tramway assets - Tramway maintenance programme (programme on website and weekly social media updates)
- Reactive works
 - Tramway teams will update our communication team about any severe weather alerts or other events likely to cause disruption and the action they are taking. Works are coordinated to minimise disruption to the public. We aim to ensure the benefits of this are conveyed to customers and that works are always in their best interest

Specific messages

Clear and accurate information about plans or where specific feedback is requested:

- Disruption due to Fleet breakdowns or power outages
 - Any disruption to services likely to be caused by BTS maintenance activities.
- Specific projects/ plans

- Information, FAQs and works schedules for major projects published on public-facing council website and full briefs given to the call centre and used for social media engagement
- For traffic management schemes, such as a new pedestrian crossing, we aim to explain to the public the rationale and benefits the new scheme will provide so not just seen as an inconvenience
- Press releases are sent out to local media about schemes or major projects (FAQs and information on the website may also invite local media attention)
- On site scheme signage is put up by contractors in advance of any works
- Specific responses/ feedback
 - Social media responses to queries about specific works or projects (this platform is used to engage as well as inform - residents' enquiries are directed where appropriate to online reporting forms, FAQs and other digitally available information to provide them with honest and accurate information)
 - Responses to FOI's
 - Responses to CRM reports - standard letter responses are currently used to respond to residents after they report faults a
 - Responses to press enquiries (the relevant Tramway team is contacted so that we can provide factual and accurate information back to the journalist, this is done so as quickly as possible)

3.4 Communication Channels

People engage with information in a variety of ways and whilst the advances in technology offer exciting new ways of communicating, traditional methods (newspapers and leaflets) are still fundamental methods of communicating. Using a variety of different channels and/or media outlets, enables us to reach a wider customer audience.

Below are the channels that we communicate through.

Table 3: Communication Channels

Channel Type	Channel Reference
Internal Channels Enables communications between staff, including video meetings and also provides a library of all emails and documents.	<ul style="list-style-type: none"> ● BC MSTeams ● BC staff intranet ● BTS staff intranet
BTS Website	<ul style="list-style-type: none"> ● www.blackpooltransport.com (public)

Channel Type	Channel Reference
<p>Focuses on the Tramways journeys, timetable, fares and tickets but also gives information about careers with BTS and thing to do in Blackpool. It also provides a forum for customer feedback.</p>	
<p>BTS App Provides a similar service to the website</p>	<ul style="list-style-type: none"> • BPL Buses and Trams
<p>Council run channels These publications are operated by Blackpool Council to reach residents, staff and council members. Information on the Tramways is generally limited to planning requirements on the highway.</p>	<ul style="list-style-type: none"> • www.blackpool.gov.uk • Blackpool newsletter (public) • Climate Emergency and Environment e-newsletter (public)
<p>Social Media Our social media channels are an increasingly important way of communicating with stakeholders, providing us with another platform to reach a different audience. The Council recognise the need to regularly publish updates around key projects and works programmes, particularly where this may cause disruption for residents and visitors to Blackpool. Blackpool Council's social media channels enable real-time dialogue between staff and Blackpool, reducing response times and more efficiently signposting.</p>	<ul style="list-style-type: none"> • LinkedIn @Blackpool Town Council • Facebook @Blackpoolcouncil
<p>Print media Local publications in Blackpool are a great platform for us to be able to reach residents and other stakeholders. The Council has established relationships with local and national journalists and there are corporate guidelines for communications with local media and these will always be followed. The most relevant news outlets are targeted based on content.</p>	<ul style="list-style-type: none"> • Blackpool Gazette • Press Association • Industry related press (eg Highways & Transportation, UKTram Online, Tramways & Urban Transit) • Local community magazines and newsletters
<p>Radio media A few local channels often feature Tramway related news so this is another channel that we like to reach out to when</p>	<ul style="list-style-type: none"> • BBC Radio Lancashire • Blackpool Radio

Channel Type	Channel Reference
it comes to significant projects and schemes.	
Broadcast media For major events, projects and issues, TV broadcast media can be used as this is one way that important messages can be put out to a wider audience.	<ul style="list-style-type: none"> • North West Tonight • Granada Reports
Other methods of communication These are the other main ways we communicate with our customers.	<ul style="list-style-type: none"> • Email • Phone • Face-to-face meetings • Public Council Meetings

3.5 Methods of Obtaining Feedback

BTS website and App provide the most direct mechanism for customers to contact BTS with comment and feedback. The website also includes a 'live-chat' service. Customers can also contact BTS by email and by phone.

Social media channels also provide a platform for customers to give feedback including Facebook and Twitter. Social media channels also signpost to the BTS website and BPL App where more information can be found on the specific request or respond directly where appropriate to provide accurate and timely information.

Where projects require consultation, specific communication channels are looked at and target audience identified, for major projects such as the North Station scheme this could include face to face meetings, consultation letters and online surveys.

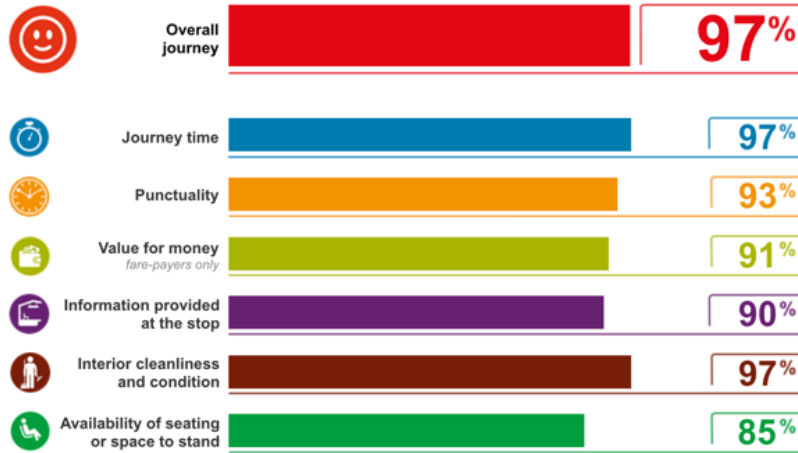
A customer relationship management (CRM) system is being planned. This will be used for responding to complaints, comments and compliments and provides high quality reporting and feedback.

BTS also conduct both an annual customer survey and regular deep dives on customer views in order to identify any issues with the Tramway. The feedback from these surveys is benchmarked against other UK Light Rail operators so that potential improvements can be prioritised.

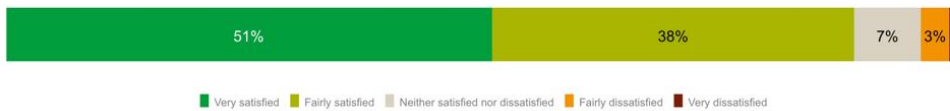
3.6 Historic Customer Surveys and Feedback

Feedback from the above have been collected for several years. The outputs from the most recent surveys are summarised as follows:

Tram Passenger Survey
Satisfaction scores



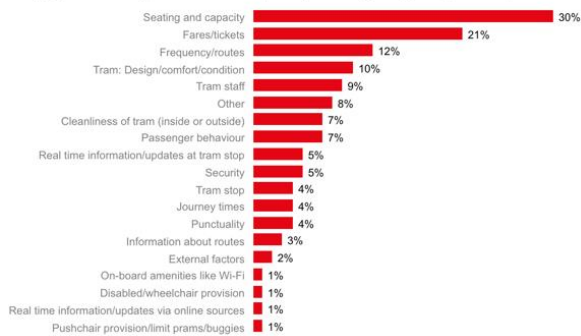
Overall satisfaction with journey



89%

(Total: very/fairly satisfied)

Suggested improvements *(among those suggesting an improvement)*

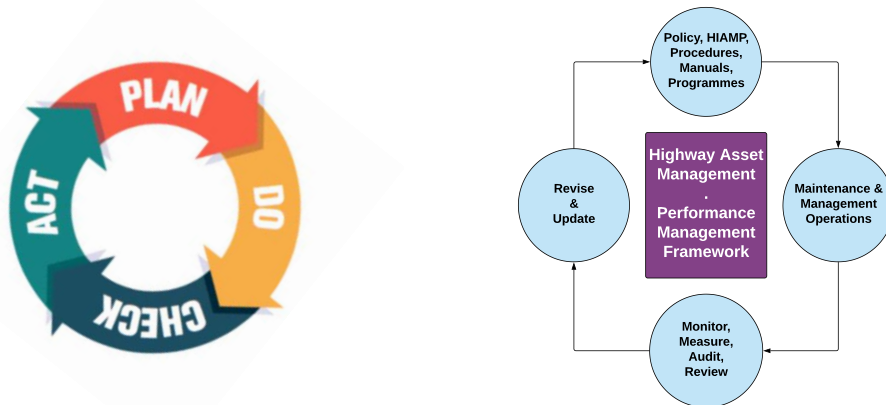


The Tramway team will measure its performance of this strategy against our objectives in order to amend or enhance it where necessary. This is covered in Section 4 of this Plan.

4. Performance Management

4.1 Aims and Objectives of the Performance Management

Monitoring our performance against defined Levels of Service will enable the Tramway team to balance the needs of communities and the Council's aspirations, with the resources that are available, to ensure that the Tramway contribute to the success and future development of the Town.



Performance Management describe continuous improvement within a Plan>Do>Check>Act (PDCA) cycle, as shown above, for checking that maintenance services are being delivered as specified. Tramway Asset Performance Management focuses on the maintenance and management of fixed Tramway assets – as such it does not cover general corporate performance, employee performance, general plant and equipment (including IT) etc.

The objectives of setting & measuring performance are:

- Provide a systematic approach to measure progress in the implementation of asset management.
- Set Levels of Service and performance targets to enable auditing and monitoring of the delivery of the asset management strategy.
- Demonstrate how funding is being used effectively to meet the levels of service and performance targets.
- Provide the link between corporate vision, asset management strategy, levels of service and maintenance operations.
- Facilitate effective communications with stakeholders by demonstrating performance against their requirements; and
- Demonstrate any shortfalls in funding.

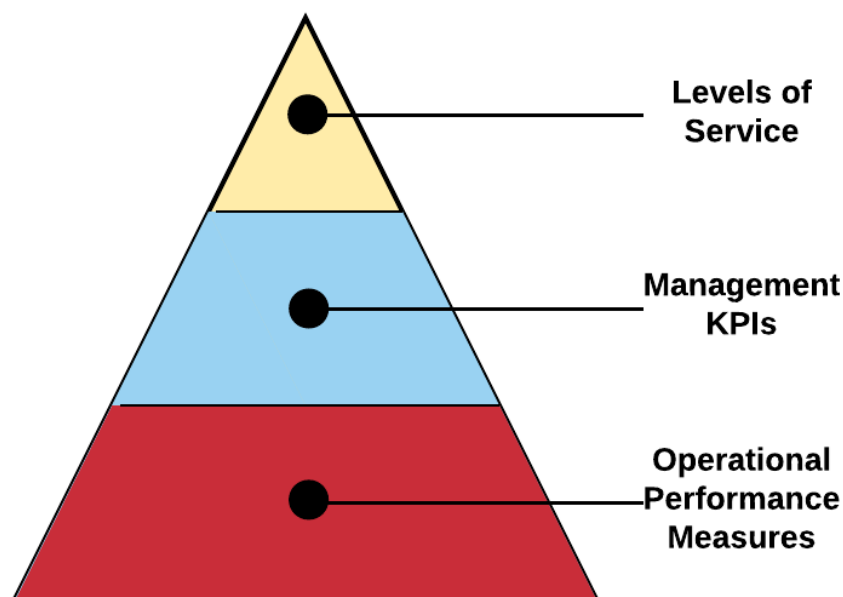
The benefits of setting & measuring performance:

- Provides evidence for continuously improving our services;
- Provides evidence that our services meet the needs of users;
- Makes our Tramway Service's asset management activities more accountable to the users;
- Provides a basis for effective communication;
- Develops an understanding of training needs;
- Ensures work is achieved on time to agreed standards;
- Improves decision making; and
- Identifies priorities and ensures everyone is working together and focusing on achievement of targets and goals.

4.2 Performance Management Hierarchy & Metrics

4.2.1 General

An implementation programme is being developed that will allow the Tramway team to report, based on evidence, on compliance with Tramway asset management KPIs, condition and performance metrics and the general state of compliance with its stated Strategy.



- **Strategic Reviews** – these provide assurance that asset management is being operated as intended. This includes monitoring to ascertain whether the asset management strategy outcomes are being met, including stakeholder requirements, that the approach to asset management has been documented and implemented, that the supporting processes are effective and that changes or improvements are being implemented.

- **Levels of Service and Management Key Performance Indicators** – Measurement of the effectiveness and efficiency of asset management using a series of metrics at the strategic and tactical operational levels. This includes monitoring against Levels of Service and supporting performance targets and determining whether they have been met.
- **Operational Performance Measures / Compliance Monitoring** – Performance of maintenance services and of contractors against their contractual obligations.

4.2.2 Strategic Reviews

The Tramway Infrastructure Improvement Board will ensure that the asset management approach continues to be effective by conducting Strategic Reviews at regular intervals. These will consider performance reviews, other reviews (including strategy, policy, funding, service) and any supporting improvement programme. The reviews should include:

- Results of Management KPIs, Operations Compliance Monitoring and Audits.
- Applicable legal and other requirements.
- The results of stakeholder engagement and relevant communications, including complaints, and on the adequacy and effectiveness of the Tramway Communications Strategy.
- Reports on the adequacy and effectiveness of the Tramway Policy and Strategy.
- Other records or reports on performance of the Tramway infrastructure.
- Follow-up actions from previous Strategic Reviews.
- Changing circumstances, including changes in legislation, funding or other requirements related to the Tramway infrastructure.
- Changes in technology.
- Benchmarking & Efficiency reviews.

The output from these reviews and from stakeholder consultation enable the process of continual improvement.

4.2.3 Levels of Service & Management KPIs

Levels of Service

Levels of Service for the Tramway are described in the Tramway Asset Management Strategy.

Management KPIs

Management KPI's provide the metrics against which managers can assess whether or not the Levels of Service are being achieved.

Historically, there has been no recording or reporting of KPIs. A series of KPIs therefore needs to be developed. Proposed Management KPIs (and associated Definition Cards) are detailed in Appendix C, however, may be subject to change as Tramway performance management matures.

The Definition Cards, as mentioned above, sets out for each KPI, all relevant details for the respective measures, including method and frequency of measurement, responsible owner, data source, reporting timeframe and format, as well as the link to Service Levels and Strategic Objectives.

National Indicators

There are no reporting requirements of Tramway performance metrics on a national basis other than those related to safety on an as needs basis.

4.2.4 Compliance Monitoring

Compliance Monitoring is used to check the performance of in-house service delivery and maintenance contractors against their contractual obligations.

These are reviewed regularly such that action plans can be put into place for any area where performance falls short of the required standard. Compliance Monitoring shall be carried by the following contractors:

- Blackpool Council Track Services
- BTS
- Contractors on frameworks
- Contractors appointed for one-off contracts with values greater than £1m
- Material suppliers with values greater than £0.5m per annum
- Consultants appointed for one-off contracts with values greater than £0.3m.

The performance metrics for each of the above will vary. They are not reproduced here-in since they may vary as each contract progresses. As such no standardised form for compliance monitoring has been developed. It is for each contractor to measure performance and report as required and as such it is the contractor's metric pro-forma that will be used.

With respect to BTS, the Tramway Operating and Maintenance Agreement Schedule 1 (Maintenance Specification) describes 22 No. issues with which BTS are obliged to comply and that compliance with these issues should be reported should be reported within the Service Performance Report specified within Clause 32 of the Agreement. The Schedule 1 issues are a mixture of Levels of Service and Management KPIs although there has been no specific metric set against any of these. Compliance monitoring of BTS should therefore be developed which align with the Levels of Service and KPIs both within this TAMP and the Tramway Operating and Maintenance Agreement.

4.3 ORR Audits

All aspects of Tramway management and maintenance are subject to external audit by the ORR and their various offices with a focus on safety. The scope and frequency of these audits are by agreement of the ORR. Details of audits are described in the BC Track Services and BTS Safety Management System manuals.

4.4 Performance Reviews

Scope

The strategic reviews, KPI, compliance monitoring and audit results shall be monitored to enable the Tramway team to assess if the methods and materials in use, either in planning or execution are working effectively to result in the expected outcome. If this is not the case, the strategy or method may need to be revised and updated and provide the mechanism for continual improvement of the Tramway maintenance and management services.

Performance reviews consider results, factors contributing to performance, and options for when performance requirements have not been met. Reviews can be carried out at regular intervals, but it would be usual for them to be carried out on an annual basis.

Reviews should focus on the performance requirements that have been developed to support the Tramway Asset Management Strategy. They can also consider more operational requirements. Lessons learnt and improvement actions should be captured for all aspects of the process, especially where performance is below that expected.

The scope, lead officer and frequency of these reviews is described in the Performance Management Implementation Plan detailed below.

Targets and Benchmarking

Targets for the local KPI's are established based on historical performance of the Tramway within the Town.

Targets also need to reflect the financial budgets available and forward planning for future resources. Services cannot be delivered to specified qualities and frequencies if insufficient funds are available. Targets are therefore risk-based taking into account the historical performance, condition, customer expectations and feedback, corporate requirements and the funding available and established using different scenarios of the latter.

As a member of UKTram, the Tramway team also have the opportunity to benchmark their performance against other Tramway owners and operators.

The process of comparing achieved values against service levels and benchmarked targets is part of the Continuous Improvement process described below.

4.5 Continuous Improvement & Change Management

The outputs from the performance reviews may require improvement actions and possible changes to:

- Asset Management Policy and Strategy
- Asset Management performance requirements
- Change in performance standards
- Methods and materials
- Resources for Tramway infrastructure maintenance and support
- Other elements of Tramway Asset Management

Chaired by the Managing Director of BTS, Continuous Improvement meetings will be held to undertake Continuous Improvement reviews. The meetings should take place twice a year or more frequently if deemed necessary.

These improvements may be formally documented in an improvement plan. It should detail the expected outcomes of the improvement, the specific actions to be taken, the owner, the resources needed to deliver them and timescales. Improvement actions should be prioritised and placed into timeframes that are realistic and affordable. In prioritising the actions, a balance between risks, costs, strategic priorities, levels of service and expected benefits should be achieved. This will ensure that focus is maintained on the outcome of the improvement and the ultimate benefit it may provide to the authority and stakeholders.

Proposed improvements should be introduced on LEAN strategy which aims to remove waste and improve value by identifying and reviewing the detailed work-flow. Examples of waste are:

- Mura or waste due to variation
- Muri or waste due to overburdening or stressing the people, equipment or system
- Muda also known as the "seven forms of waste"
- Transportation: Is there unnecessary (non-value-added) movement of parts, materials, or information between processes?
- Waiting: Are people or parts, systems or facilities idle — waiting for a work cycle to be completed?
- Overproduction: Are you delivering sooner, faster, or in greater quantities than the customer is demanding?
- Defects: Does the process result in anything that the customer would deem unacceptable?

- Movement: How much do you move materials, people, equipment, and data within a processing step?
- Extra Processing: How much extra work is performed beyond the standard required by the customer?
- Inventory: Do you have any raw materials, work-in-progress (WIP), or finished assets or deliverables that are not having value added to them?

4.6 Implementation

The overall responsibility for the governance and ownership of this Performance Management rests with the Council. Within this responsibility for the collection and coordination of performance-related data and service improvements sits with the Engineering Manager for Track Services and for BTS, the Managing Director of BTS.

The performance reviews and continuous improvement process shall be implemented as follows:

Checking Regime	Scope	Frequency
Strategic Reviews	<ul style="list-style-type: none"> • Operating, Maintenance and Refurbishment Plans, Tramway Asset Management Policy & Strategy • Outputs from LoS/Management KPIs, Operations Compliance Monitoring and Audits 	Annually or as required
Levels of Service & Management KPIs	Tramway Asset Management Key Performance Indicator monitoring	Quarterly or as required
Operations Compliance Monitoring	Operations Performance Metrics for in-house and external contractors, suppliers and consultants as specified in their respective contracts.	Monthly or as required
Audits	Independent ORR reviews	Annually
Continuous Improvement	Review of outputs from Strategic Reviews, Management KPIs, Operations Compliance Monitoring and from Stakeholder feedback	Biannually

5. Maintenance Methods

5.1 General

There are many operational activities required to maintain the Tramway. The activities are divided between Track Services for the permanent way and BTS for the fleet. The activities are further subdivided between routine maintenance and planned capital maintenance. This Section of the TAMP will therefore describe these activities, including details of materials, under the following general headings;

- Permanent Way – Routine (Cyclic, Reactive and Emergency) Maintenance
- Fleet - Routine Maintenance
- Permanent Way - Planned Capital Maintenance
- Fleet - Planned Capital Maintenance
- Network Improvements
- Sustainability

It is noted that well managed routine and planned capital maintenance are necessary for the effective and efficient whole-of-life treatment of Tramway infrastructure asset and essential elements of the Lifecycle Plans described in Section 8 on this TAMP.

Under the terms of Clause 21 of the Blackpool and Fleetwood Tramway Operating and Maintenance Agreement, BTS are required to produce an annual Operating Plan, Maintenance Plan, and Refurbishment Plans. Since the assets maintained by BTS only about 10 years old (i.e. installed in 2012) the various plans have yet to be developed.

5.2 Routine Maintenance

Routine maintenance can be described small scale maintenance actions, arising from inspections and defect reports, undertaken within the short and medium-term to minimise long term deterioration of the Tramway infrastructure assets. It covers the following more specific preventative maintenance activities:

- Cyclic maintenance – these are preventative maintenance activities that are undertaken low scale that are undertaken on a regular planned basis such as weed spraying.
- Reactive maintenance – these are typically non-urgent based maintenance required to ensure the ongoing safety and reliability of the Tramway such as point cleaning and degreasing.
- Emergency maintenance – these are urgent activities required to ensure the continued safety of the network such as welding of spot defects.

The routine maintenance works will remove non-compliances, addresses short term improvements in the performance of the infrastructure, and delivers longer term continuous improvement in the asset management system.

The items listed below are summarised for the entire network. The list is not exhaustive and any major repair or replacement work to be carried out forms part of the larger maintenance items identified in Planned Capital Maintenance.

5.2.1 Permanent Way Routine Maintenance carried out by Track Services

Permanent Way routine maintenance includes the following activities:

- Track Inspection and Geometric Surveys *
- Rails & ancillary component repair due to wear, fracture and breakage
- Sleeper alignment, repair or replacement *
- General rail welding & grinding
- Ballast Tamping *
- Solum failure repairs
- Fish Plate lubrication
- Concrete Nibs (section concrete road/rail)
- Switches & Crossing (including blades) repairs
- Points (motorised and manual) cleaning and greasing *
- Signals cleaning
- OLE pole cleaning, painting and replacement
- Repair / replacement fences *
- Gates and shelters
- Litter clearance
- Weed Spraying *
- Sand and gravel maintenance
- Groove cleaning.
- Platform datum plates checks *
- Platform furniture cleaning, painting and repairs
- Street paved track repairs *
- Cleaning and jetting of Tramway drains *

The defects associated with the track (i.e. rails, sleepers, ballast, solum) and the response time from identification to repair, are described in the **Tram Track Handbook**.

The scope of each the above activities marked by * is detailed in a series of **Track Services Work Activity Plans (WAPs)**, a list of which is shown in Appendix D. Where an activity is not shown in Appendix, this will be developed as and when necessary. The WAPs provide safety critical information and enable effective and efficient delivery of each work activity by specifying the following issues/requirements:

- Asset location/reference
- Personnel (including qualifications)
- PPE
- Tools
- Pre-requisites and special precautions
- Permits and Notifications
- Operations planning
- Risk Assessment
- Actions on completion
- Toolbox talk records

5.2.2 Routine Maintenance carried out by BTS

BTS routine maintenance includes the following activities, details of which are included in the BTS-SMS:

- Inspections (as per Section 2.3.2)
- Maintain Overhead line
- Maintenance of the SCADA System
- Sub stations and associated traction (Power)
- Maintenance of the Signalling Systems
- Maintenance of the rolling stock (including wheel shafing)
- Tram Depots (Rigby Road and Starr Gate)

5.3 Planned Capital Maintenance

Planned Capital Maintenance can be described as large-scale maintenance actions required to achieve the design life or possibly even extend the working life of asset and to prevent whole-sale replacement.

5.3.1 Permanent Way Planned Capital Maintenance carried out by Track Services

There are 5 major Planned Maintenance items associated with the Permanent Way.

- Corrugation
- Tamping
- Sub Arc Welding
- Turn Out Replacement
- Rail Replacement

The primary works need on the permanent way are the corrugation and tamping works. Planned capital maintenance of the permanent and fleet are typically undertaken at the same time so that disruption to services and costs are minimised.

Corrugation

Rail corrugation on the Blackpool to Fleetwood Tramway is one of the biggest issues. The corrugation can be removed by grinding and as part of the grinding programme, other minor rail head defects, noisy welds, gauge corner lipping and gauge corner radius restoration can take place as part of the same process.

A rail grinder is a rail mounted vehicle used to restore the profile and remove irregularities from worn tracks to extend its life and to improve the ride of trains using the track. Rail grinding is a process that is done to stop the deterioration due to use and friction on railroad tracks by removing deformations and corrosion. The grinding wheels are set at controlled angles to restore the track to its correct profile to ensure ride quality and to protect the rail and rolling stock. Railroad tracks that experience continual use are more likely to experience corrugation and overall wear. Corrugation repairs are carried out as necessary, since without this maintenance work, the rail would eventually need to be replaced as well as causing significant damage to the rolling stock.

Tamping

Ballast tamping is done to ensure that the rail surface is supported properly. This requires a specialist machine to be hired to repack to maintain line and level. Data to support this is obtained from a trolley survey. The scope of tamping needs to include the removal of under-run protection and temporary traffic management.

On the segregated sections, tram tracks are laid on typical ballast and sleeper construction. To ensure future track stability, the ballast requires compacting (tamping). The machine travels along the system analysing the line and level. All defects identified are then removed by re-packing the ballast.

Sub Arc Welding

On curves, the interaction of the tram tyre and side of the rail generates wear to both the tram tyres and the rail head. Overtime, this wear, if left unchecked could result in derailment. The rail-head and side-wear is monitored and intervention, in terms of welding is undertaken to ensure the wear limits do not exceed the upper limits. On the street-rail, the rail is a very hard grade requiring a pre-heat of 350 degrees centigrade. However the rubber encapsulation releases toxic vapours from 140 degrees, therefore usual normal welding techniques cannot be applied. To avoid the pre-heat issues, submersed arc welding is required, which is highly specialised and there are not many companies that can undertake this work. Failure to repair the head wear will initially result in line speed restrictions then followed by line closure as the rail deteriorates further.

The costs of the immediate (high priority) work required for the welding and rail replacement is very high. In the longer term therefore, a cost benefit analysis strategy approach is required towards the use of Sub Arc welding verses complete replacement of the affected rail. This would be based on the cost of the welding maintenance and

funding required compared to the cost of replacing the rail thereby saving the welding costs and time required to resource this.

Turn Out Replacement

This involves the maintenance of the switches and crossings that allow the trams to cross the tracks. They comprise of the rail, blades and switch boxes (some which contain pistons) that automatically spring the blades to direct the trams when crossing between the tracks. The blades form the running line and if they are damaged, they would cause a tram to de-rail and the line would have to be closed.

Rail Replacement

There is a need for replacement of rail on an ongoing basis. The Fylde Coast's saline environment accelerates the need for this in comparison with inland systems. The scope of laying replacement rail includes tamping, packing and welding.

There are two forms of rail deterioration called 'Head-Wear' and 'Side-Wear'. Side-wear can usually be repaired by welding but it is not practicable to weld head-wear as this is on the running surface, therefore replacement is the only option. The rail head and gauge corner wear are monitored/recorded and categorised in accordance with the track standards document. The observed wear rates are plotted on a graph to determine the life time of the rail. Keeper wear is monitored visually but not recorded/graded as rail wear. Any significant wear to the keeper is noted and re-welded as and when required.

The amount and rates of top and side-wear are measured, resulting in a predicted life span of the rail. Failure to replace rail could result in derailment.

The sustainability and stability of the permanent way is dependant in many areas on coastal protection structures. Whilst maintenance of these structures does not fall within the scope of this TAMP, regular liaison with the Blackpool Council coastal structures team and alignment with the Coastal Protection Asset Management Strategy 2015-2045 is essential to ensure any repairs to those structures has a minimal impact on the Tramway.

5.3.2 Planned Capital Maintenance carried out by BTS

Since all Tramway assets are owned by BC, the Council is responsible for the funding of capital works managed by BTS. The scope and timing of capital works is therefore subject to agreement between BTS and the Council based on condition reports produced by BTS.

Since the assets maintained by BTS are only approximately 10 years old (i.e. installed in 2012), no major maintenance on the system has yet been undertaken and none has been planned.

5.4 Network Improvements and Sustainability

Improvements to the Tramway are inevitable. They are required for many reasons including to combat the increasing impact of climate change, advancement in technology or changing usage demands.

Network Improvements in themselves are not covered by this TAMP. However, it is critical that in the design on any extension or improvements to the Tramway, the cost and practicality of maintenance work is taken into account. This approach also needs to include a process of hand-over of the new assets to the respective maintenance parties.

This 'design for maintenance' approach will help ensure the continued effective and efficient operation and maintenance of the Tramway throughout its whole life.

The management and maintenance of the Tramway network in a sustainable and environmentally responsible manner is a core element of our lifecycle planning. Our objective is that the Tramway assets provide social value by maximising the benefits of partnership, working with both internal and external stakeholders, and giving careful consideration to the impacts of all actions arising from climate and environmental changes to the network. Conversely, we will work to provide affordable management of our assets to minimise any impact they have on the environment and climate change. We will seek to utilise recycling strategies for as much as possible of our works, to reduce our carbon footprint, and to prolong the lifetime of our source of materials.

The tramway renewal process established the system's social, environmental and economic benefits for the Fylde Coast were established as part on renewal process completed in 2012. It would be useful to establish a process whereby this appraisal might be updated periodically, maintaining a resource that might be used to seek further funding as this possibly becomes available.

6. Safety and Risk Management

An introduction to safety and risk management is described in Section 9 of this TAMS. The TAMP will include details of the issues:

- Safety Management Systems
- Safety At Work
- Historical Safety Incidents
- Other Tramway Risks

Safety Management Systems

The network is governed by the Office of Road and Rail (ORR) which is the independent safety and economic regulator for Britain's railways. It is responsible for ensuring that railway operators comply with health and safety law and the Railway and Other Guided Transport Systems (Safety) Regulations (ROGs). Regular meetings are held between the Tramway operator, BTS, and the ORR, typically every 2 months. The ORR require a Safety Management System (SMS) to be in place.

The Track Services SMS is a comprehensive document which defines the roles and responsibilities of managers and operatives to ensure the transport system is run safely. The SMS establishes the links with ORR, LRSSB and RAIB and with the Tramways Safety Management Group and Tramway Management Committee. It sets out the arrangements for how managers control the SMS at all levels, shows how workers and their representatives are involved and ensures that Track Services continuously improves service delivery and availability through setting targets and measuring performance against established benchmarks.

A comprehensive BTS SMS is in place which is reviewed annually or as regulations change and new ones come into force. The SMS is based on the risks identified to the business, by the activities carried out. It sets out the policy, organisation, planning and implementation arrangements, measuring and review of performance together with the control measures in place to mitigate identified risks. It is based upon the principles laid down in HSE guidance, HS (G) 65, and industry best practice.

The TS and BTS SMS documentation and risk registers require review to ensure all aspects of safety on the Tramway network are aligned.

Maintenance responsibilities under the tramway renewal project agreement with Government need to be clarified, particularly in relation to the track and overhead lines. As per the Engineering (Trams) SMS "the Council requires assurance, not only that BTS's SMS (Trams) adequately controls all safety risks associated with the trams and their operation but also of their ability and competence to work on their infrastructure and do this work safely. Similarly, BTS requires assurance that Track Services' SMS adequately controls all safety risks associated with the track, overhead wires, and electrical infrastructure areas". However, there is currently no Service Level Agreement (SLA) in place between the Council

and BTS and there is no requirement for BTS to report on the maintenance work undertaken or how the funding has been utilised.

Safety at Work

Track Services, through the Tramway Safety Officer (TSO) manages and controls all track access for any parties wanting to work on the permanent way via a permit system. Track services have developed a document titled "**Safety on the Line**" which detailed all aspects of this permit system. TSO permits issued to control access to the Tramway assets are supplemented, when identified by work activity assessment, by isolation permits controlled and issued by BTS's Engineering Department.

Historical Safety Incidents

BTS keeps records of public H&S.

The BTS record on health and safety has been excellent. Tragically there was a fatality at the Fleetwood Road crossing in 2021 for which investigations, at the time of drafting this TAMP v0.1, are still ongoing.

Notwithstanding these investigations, the Council had decided, without any admission of liability to make changes to the layout of the Fleetwood Road junction and to install obstruction detection equipment on the trams.

TS have zero recorded safety incidents in the past 5 years.

BTS staff safety record in the past 5 years is also excellent with minimal reported incidents. A record of H&S incidents is maintained by BTS.

Other Tramway Risks

As detailed in the TAMS, in addition to safety there are other risks to be assessed and monitored on the Tramway. These risks are recorded in accordance with Blackpool's corporate risk strategy.

7. Resource Management

7.1 Aims and Objectives of Tramway Resource Management

Management of resources allocated to Tramway for BC Track Services and BTS maintenance activities, both internal and external, is essential to ensure that the network is safe to use and is managed efficiently and effectively.

The aims resource management are therefore to:

- Identify future resource requirements, type and quantum, for all Tramway activities.
- Identify which activities can use in-house resources and which activities external suppliers.
- Ensure resources deployed for each activity have the appropriate competencies.
- Establish protocols for checking that resources are used safely.
- Establish protocols for checking that resources are used effectively and efficiently.

Given that a high proportion of Tramway maintenance services are carried out by internal staff, this level of resource planning and skills development will be critical for the future management of our asset infrastructure. The objectives of Tramway resource management are therefore to:

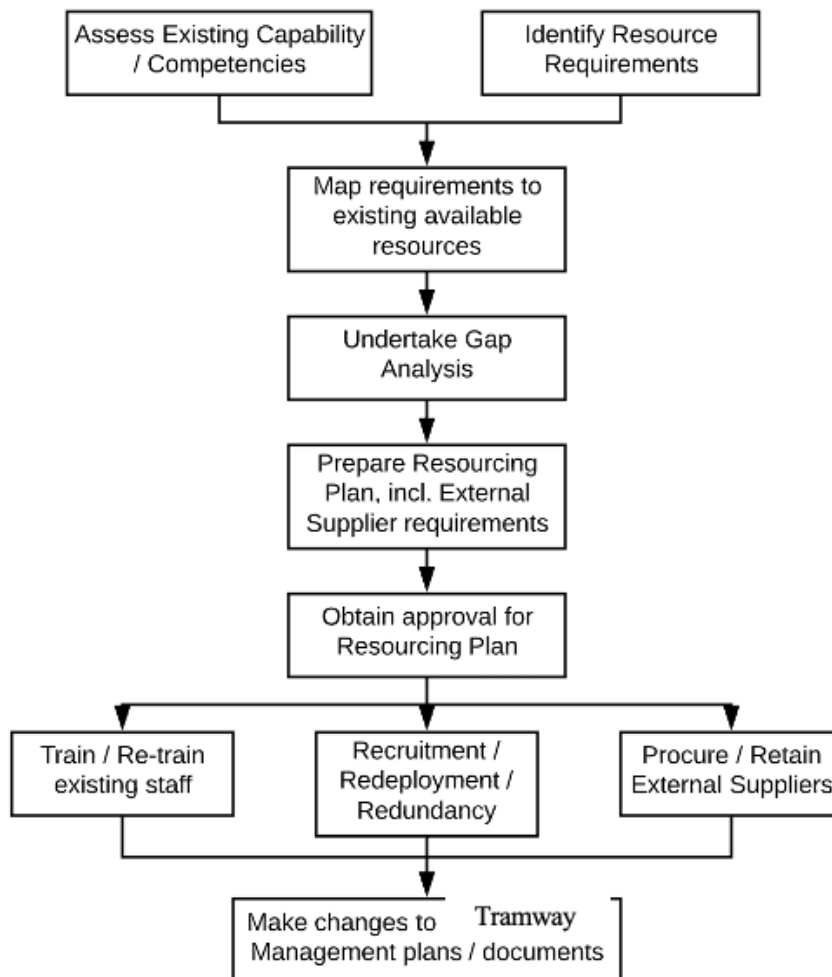
- Determine the required functions to be addressed for tramways in the planning and delivery of services.
- Assess current procurement strategies for alignment to delivery optimisation.
- Consider strengthening or changing procurement options to ensure more efficient and effective delivery.
- Define corresponding Skills and Competencies required so that these services and functions can be successfully deployed.
- Undertake Skills & Competencies assessment of existing staff to determine current levels and identify any gaps in the organisation's capability.
- Develop a programme to develop and train Tramway staff to achieve competency requirements.
- Ensure protocols are in place to enable reviews of safety, effectiveness and efficiency of Tramway resources.

Resource Management will therefor cover the following issues:

- Resource Requirements
- Procurement of External Suppliers
- Competency Assessments
- Resource Reviews

7.2 Resource Requirements

Resources requirements are managed as detailed in the following process. This is undertaken annually, on a formal basis, but the same process applies to ad-hoc reviews as needed.



Tramway management and maintenance delivery requirements will be identified during the development and implementation of the asset management protocols and these will be identified in an annual programme of activities. Tramways will map its available resources to its planned activities to determine any gaps as detailed below. This applies across all maintenance and management activities, could be extensive and will require prioritisation and programme planning of many projects to close these gaps.

The in-house team is regularly reviewed and may therefore be changed from time to time. In determining options for resourcing the activities, consideration will be given to both internal and external resources. For human resources, options available will be affected by policy and strategic plans for human resources, contracting-out or outsourcing and existing contractual arrangements. For non-human resources, availability of resources should include consideration of procurement options (e.g. lease, hire, purchase or otherwise acquire). Both

human and other resourcing needs can be influenced by the nature and duration of the activities (e.g. one-off versus on-going).

Any tools, facilities or equipment that are required for maintenance activities should be defined and managed as assets, at a level of detail appropriate to their function and purpose.

Following the review of resource requirements, a gap analysis will be made against the existing capacity, capability and resource arrangements to determine:

- Outline training needs of in-house staff
- Recruitment / Redeployment / Redundancy requirements
- External supplier retention and procurement needs.

The resource proposals will identify the above issues, the estimated cost impact of the recommendations, the time to implement any changes and, where external suppliers are identified, the selection process.

Once approved, any changes to existing arrangements will follow the Council's corporate protocols, such as Human Resource recruitment processes, for implementation. The impact on existing asset management processes and procedures will also be identified and tramway Asset Management documentation updated as required.

7.3 Existing Internal Staff Resources

7.3.1 Track Services

The Council's Track Services team is shown in Appendix H. It comprises eight operatives including three apprentices, one welder and a full-time track inspector. The service is a couple of operatives short due to one member of staff being on long term sick and the retirement of another member of staff several months ago. The Head of Highways and Traffic Management Services intends to review the service and roles and responsibilities of the track team to ensure it is fit for purpose going forward.

7.3.2 Blackpool Transport Services

BTS have a comprehensive internal staff structure. The principal roles, descriptions of which are detailed in the BTS SMS, are:

- Managing Director
- Finance and Commercial Director
- Organisational Development Director
- Head of Tramway
- Head of Safety and Facilities
- Head of Service Delivery
- Head of Bus Operations
- Heritage Operations and Training Manager

Supporting these managers are a team of administrators, engineers and technicians, drivers and conductors and other staff. The key roles with respect to asset management are the

Head of Tramway and Head of Service Delivery – organisation charts for these are reproduced in Appendix H.

7.4 Procurement of External Suppliers

Where the need to outsource has been identified, there are a range of options available for procurement of contractor or consultancy service. These include:

- Temporary Hire or Lease
- One-off construction / design contracts for single schemes
- Construction / design contracts for a package of schemes
- Construction frameworks
- Defined project works for management and engineering consultancies
- Staff outsourcing arrangement with agencies and consulting engineers

BC's Department of Procurement will give clear and coherent details of the full range of options and the constraints related to procurement, including compliance with government regulations.

The outsourced services, both current and planned, and the supply chain partners are listed in Appendix D. This will be reviewed and updated annually.

7.5 Competencies Assessments

General

The competencies of all the Tramway staff, including management competencies, are assessed annually through the internal assessment process. As a result of this process, specific training is provided as required for example, for Tramway Safety Inspector.

Asset Management Competencies

BC track Services and BTS will determine the competences required for all Tramways asset management roles and responsibilities, and the awareness, knowledge, understanding, skills and experience needed to fulfil them. A skills and competency matrix has been developed and this will be used to gauge coverage and level of asset management skills in the authority. The organisation should map its current competences to its required competences to determine any gaps. This gap analysis will be used to develop asset management competency improvement and training plans and enable incorporation of specific asset management competences into the organisational competency framework.

All persons assigned roles and accountabilities within the organisation that can have an impact on the asset management system will have those roles and accountabilities communicated to them, be provided with the training, education, development and other support needed to perform their roles, and be able to demonstrate the competences required. If a decision is made to outsource any aspect of the asset management activities,

external resource providers must demonstrate competency against the required activities. These competencies and a programme of training to fill any gap identified within those competencies, for in-house staff and external providers, is being developed.

8. Lifecycle Planning and Forward Works Plans

8.1 General

Lifecycle Plans enable evidence based and risk based forward programmes of work, including asset replacement and improvement strategies to be developed and updated. Forward Works Plans themselves are not part of the TAMP - these are developed at an operational based on the criteria in the TAMS and TAMP and outputs from the lifecycle planning.

The development of lifecycle methodology will ultimately enable Blackpool to better manage Tramway maintenance activities in order to deliver sustainable, effective and efficient services and maintenance works. This involves understanding asset value, inventory, condition and deterioration rates and the required Level of Service.

A fully developed lifecycle plans will include details of asset inventory, condition, valuation, historical investment (both revenue and capital), asset performance requirements, treatment strategy and investment / programme-of-works options. These details would form a document separate to this TAMP. Such as system of system of lifecycle planning has yet to be developed for the Tramway and the information required to do so has not be recorded. As such there are currently no fully documented lifecycle plans for the Blackpool Tramway and action is required to develop these.

Lifecycle analysis will support treatment strategies and performance targets and decisions regarding the distribution of budgets. They will not be used to identify specific schemes or programmes of work but will act as tools for testing and managing investment scenarios relation to various funding levels. Essential to this process is a need to understand the influence of budget decisions on customer satisfaction and delivery of corporate priorities. Furthermore, the impact that investing on one asset may have on the overall performance of other assets, as well as the whole asset is examined. This approach allows for the available budgets to be split at a strategic level.

Notwithstanding the current situation, it is possible to develop investment plans based on currently available information. These investment plans are developed below and include details of what actions are required to progress towards fully developed lifecycle plans, describing the following issues:

- General
- Asset Inventory and Condition
- Asset Valuation
- Asset Design Life & Performance Requirements
- Treatment Strategy
- Historic Maintenance Costs
- Lifecycle Analysis
- Forward Works Programme

- Funding

8.2 Asset Inventory and Condition

Having a good knowledge of the quantity of assets to be maintained and monitoring the condition of those assets is a crucial element of lifecycle planning in order to demonstrate the levels of service being delivered, to identify trends in improvement or deterioration, to identify priorities for focusing available resources and to monitor the effect of treatment strategies. The details of the inventory and of inspections and surveys undertaken and planned on the key assets is described in the Data Management section of this TAMP.

The good level of preventative treatment and renewals undertaken over the last ten years which have been reflected in the current good condition of the network. However, to maximise the serviceable life of assets and therefore reduce the frequency of asset renewals, we need to explore different treatment strategies to some of those previously applied.

8.3 Asset Valuation

Any investment in the maintenance of infrastructure assets has to be assessed against its value for money. This requires an assessment of the valuation of the replacement cost of the asset. There is currently no process for valuation of the Tramway. However, using the cost of the upgrade works completed in 2012 as a basis, the estimated cost as at the end of 2021 of the Tramway is £168.5m, of which £45.2 relates to Track Services assets and £123.3 is related to BTS assets. A breakdown of this valuation estimate is detailed in Appendix E of this TAMP. It is recommended that a major re-valuation of the Tramway is undertaken, not only for asset management purposes but also for insurance.

8.4 Asset Design Life & Performance Requirements

One of the first steps in lifecycle planning is a knowledge of the design life of the asset being modelled and the remaining life of that asset, based on the date of construction/installation and its current condition.

The core assets on the Tramway were constructed and opened to operations in 2012 with a nominal design life of 30 years. The condition of each of these assets is monitored based on the inspection regimes detailed in Section 2.3.

Track Services are working with Huddersfield University to investigate potential methods to extend the design life of track rails.

8.5 Maintenance Strategy

Appendix A describes the principal quantities associated with the Tramway assets. As the assets age and capital maintenance is planned, it is recommended that Appendix A is expanded to include a maintenance strategy for each principal asset, covering the following issues:

- Quantification of the asset
- An overview of the current condition of each asset
- Current maintenance challenges
- Proposed maintenance strategy
- Desired outcome of maintenance activities

8.6 Historic Maintenance Costs

8.6.1 Track Services

Routine works are financed through Blackpool's Highways and Transportation revenue stream and contributions from LCC. This has historically been in the region of £1m per annum.

Capital maintenance covering a period of 5 years has recently been completed at a cost of approximately £1.1m which was made up of £200k in routine maintenance works funded from the revenue budget and £900k in capital works funded from Prudential borrowing.

The maintenance and staffing cost incurred by Track Services in the 2019/2020 financial year is shown in the table below.

	£
Employees	303,745
Premises Related Expenses	38,201
Transport Related Expenses	35,904
Supplies and Services	52,768
Third Party Payments (BTS OLE) ¹	272,000
Sub-total TS Costs 2019/20	702,617
Central Support Services ²	6,495,218
Total Costs	7,197,835

¹ Actually £312, credit of £40k (FDC) posted to Third Party Payments in period 1 (April) related to an invoice from Voestalpine VAE UK Ltd who undertook the track survey. The invoice was not received until period 3 (June) and was posted to Premises Related Expenses.

² Capital Financing Costs

8.6.2 BTS

BTS receive £312k per annum from the Council to cover the costs of maintenance of the OLE. The OLE team comprises six engineers and a manager. The costs BTS incur in maintaining the overhead line vary from year to year. The table below shows the values for 2019/2020 only. The figures for 2020/2021 have not been provided because the tram track was closed for several months last year and staff were furloughed and therefore it would have been difficult to make a like for like comparison.

	£
Overhead Team Labour	355,149
Overhead Team Manager	37,750
Parts for Overhead Maintenance	1,657
Plus Invoices included in other cost heads:	4,620
Repair to Sub Station	15,111
Annual Maintenance of Substation	
Total	414,287

Depreciation charges are incurred on road/rail maintenance vehicles at a cost of £18,000 per annum. At least half of this should be charged to the OLE. There were no repair charges for these vehicles in 2019/20 but in 2021 BTS incurred a cost of over £25,000 for the repair and overhaul of one of the vehicles. There are other company and departmental overhead costs for management, premises costs and insurance which would normally be a 20% add on.

8.7 Lifecycle Analysis

Track Services

Lifecycle analysis for permanent way assets maintained by Track Services is a relatively simple process as detailed in the table following. This table will be reviewed and updated annually to ensure it reflects the latest lifecycle planning processes.

Asset	Lifecycle Analysis
Plain Line - rail	<p>Main risk is rail head wear (fixed by replacement) and side wear (fixed by welding).</p> <p>Works maintenance plans are primarily based on routine inspections and wear rates. This information will be used to develop a programme routine works and if necessary, capital works. Specialist inspections and surveys will be used to supplement the capital works programme, particularly works related to rail head wear (which would necessitate rail replacement). Currently it is proposed that there is rolling 5-year programme of capital works as detailed in Section 8.8</p>
Plain line – track bed (sleepers, ballast, surfacing)	<p>Works maintenance plans are primarily based on routine inspections. This information will be used to develop a programme routine works and if necessary, capital works. Specialist inspections such as gauge and twist surveys will be used to supplement the capital works programme, particularly works related to tamping and corrugation. Currently it is proposed that there is rolling 5-year programme of capital works as detailed in Section 8.8, but corrugation repairs will be undertaken as necessary to ensure safe running of the trams.</p>
Switches and Crossings	<p>Works maintenance plans are primarily based on routine inspections. This information will be used to develop a programme routine works and if necessary, capital works.</p>
OLE Pole	<p>The lifespan of OLE is indeterminate. No significant works are planned on OLE poles.</p>
Platforms and associated furniture	<p>Works maintenance plans are primarily based on routine inspections. This information will be used to develop a programme routine works and if necessary, capital works.</p>
Signs and Fencing	<p>Works maintenance plans are primarily based on routine inspections. This information will be used to develop a programme routine works.</p>

BTS

Under the terms of Clause 21 of the Blackpool and Fleetwood Tramway Operating and Maintenance Agreement, BTS are required to produce an annual Operating Plan, Maintenance Plan, and Refurbishment Plans. These plans will include details of BTS's lifecycle planning. Since the assets maintained by BTS only about 10 years old (i.e. installed in 2012) the various plans have yet to be developed.

8.8 Forward Works Plans

A Forward Works Plan / Planned Maintenance Programme needs to be developed for the entire network to cover the maximum period possible. A minimum period of 5 years is recommended. Only by projecting forward the anticipated need can the best 'whole life' options be identified. It must be noted however that the long-term programmes are built on projections using currently available data and knowledge. As such there are limitations on the reliability of these projections, in particular in terms of the precise location and nature of individual projects in the later years of the programme.

The Planned Maintenance Programme should integrate the works required from all funding streams and initiatives. By bringing all the proposed works on the network into one location it enables co-ordination of works on the network to take place.

Translating the outputs of lifecycle analysis into programme of works may be a relatively simple process for the Tramway given the linear nature of the network and the well identified assets and their condition. However, there may always be some options in terms of extent and timing. In order to help prioritise the options, it is useful to establish a set of principles, potentially ranked or rated. These principles could include the following issues:

- How safety critical is the required work?
- Is it cost effective to undertake the maintenance work now or can it be delayed? This requires consideration of deterioration rates, levels of expenditure on routine maintenance.
- What is the impact of the work on users of the Tramway and on facilities such as school and businesses?
- Will completion of the work reduce customer complaints?
- Do the works align with Council Policy and Tramway Asset Management Strategy?

It is intended that the planned capital maintenance programme described below be undertaken on a rolling basis i.e. every five years and is summarised below (excludes head wear which would require rail replacement):

Planned Mtce Funding	2019/20	2020/21	2021/22	2022/23	2024/25	2025/26	2026/27	Totals	
Corrugation	£550,000					£550,000		£1,100,000	5 Year Programme
Tamping		£80,000	£80,000	£80,000	£80,000	£80,000		£400,000	
Sub Arch Welding		£70,000	£70,000	£70,000	£70,000	£70,000		£350,000	5 Year Programme
Turn Out replacement		£20,000	£20,000	£20,000	£20,000	£20,000		£100,000	5 Year Programme
Rail Replacement		£85,000	£85,000	£85,000	£85,000	£85,000	£85,000	£510,000	6 year programme
Preventative Total	£550,000	£255,000	£255,000	£255,000	£255,000	£805,000	£85,000	£2,460,000	

8.9 Funding

The current financial forecast for TS is shown below. This will be subject to annual review and adjustment based on ongoing condition surveys and BC's budget constraints.

BTS hold a similar forecast which will be made available on request as considered appropriate.

Ongoing Planned / Preventative Maintenance (RPI to be added)									
Planned Mtce Funding		2019/20	2020/21	2021/22	2022/23	2024/25	2025/26	2026/27	Totals
Corrugation		£550,000					£550,000		£1,100,000
Tamping			£80,000	£80,000	£80,000	£80,000	£80,000		£400,000
Sub Arch Welding			£70,000	£70,000	£70,000	£70,000	£70,000		£350,000
Turn Out replacement			£20,000	£20,000	£20,000	£20,000	£20,000		£100,000
Rail Replacement			£85,000	£85,000	£85,000	£85,000	£85,000	£85,000	£510,000
Preventative Total		£550,000	£255,000	£255,000	£255,000	£255,000	£805,000	£85,000	£2,460,000
Current Reactive Mtce									
Blackpool Council - Direct		£453,000	£453,000	£453,000	£453,000	£453,000	£453,000	£453,000	£3,171,000
Blackpool Council - Indirect		£84,000	£84,000	£84,000	£84,000	£84,000	£84,000	£84,000	£588,000
Overhead line		£312,000	£312,000	£312,000	£312,000	£312,000	£312,000	£312,000	£2,184,000
Reactive Total		£849,000	£849,000	£849,000	£849,000	£849,000	£849,000	£849,000	£5,943,000
Total Tramway Costs		£1,399,000	£1,104,000	£1,104,000	£1,104,000	£1,104,000	£1,654,000	£934,000	£8,403,000
Current Funding									
BC		£535,000	£535,000	£535,000	£535,000	£535,000	£535,000	£535,000	£3,745,000
LCC		£314,000	£314,000	£314,000	£314,000	£314,000	£314,000	£314,000	£2,198,000
		£849,000	£849,000	£849,000	£849,000	£849,000	£849,000	£849,000	£5,943,000
GAP		£550,000	£255,000	£255,000	£255,000	£255,000	£805,000	£85,000	£2,460,000
PROPOSED FUNDING									
Tramway Capital		£550,000							£550,000
Additional BC Cost	63%		£160,650	£160,650	£160,650	£160,650	£507,150	£53,550	£1,203,300
Additional LCC Cost	37%		£94,350	£94,350	£94,350	£94,350	£297,850	£31,450	£706,700
		£550,000	£255,000	£255,000	£255,000	£255,000	£805,000	£85,000	£2,460,000
Note 1.	Tramway Capital monies available from 19/20 Tram extension allocation								
Note 2.	Costs for various elements of tramway works are based on quotations - tendered prices may vary.								
Note 3.	Blackpool Council - Indirect Costs include employee insurance, premises insurance and depot charges.								

8. TAMP Action Plan

Based on the requirements of the TAMS and TAMP, the Action Plan detailed in Appendix G shows the time-based activities required to fully implement this Plan.

Appendix A - Summary of Tramway Infrastructure Core Assets

Asset group	Quantity
Plain Line	<p>Total = 18.2 Km</p> <ul style="list-style-type: none"> • 8.6 km shared track (paved track light) • 1.5 km highway track • 8.1 km reserved track (ballasted) <ul style="list-style-type: none"> • Sleepers: Concrete • Ballast: Granite
Switches & Crossings	<p>3 turnback facilities</p> <p>15 motorised point mechanisms</p> <p>67 sets of points on the system containing switch boxes / blades</p>
OLE Poles	<p>Total = INSERT</p> <p>(ref nos. painted on each pole)</p>
Platforms (including furniture)	<p>LRT: 73 No.</p> <p>Heritage: 11 No.</p>
Signs	<p>See Appendix 'B'</p>
Rolling stock	<p>18 No. LRT (Bombardier Flexity2 Trams)</p>

	<p>9 No. B-Fleet (Double Deck Balloon Trams)</p> <p>16 No. Heritage trams (C-Fleet) – number may vary</p>
Depots	<p>2 No.</p> <ul style="list-style-type: none"> • Starr Gate • Rigby Road
OLE / Traction Power Substations and distribution network	11 Substations
Signalling Systems	<p>19 Tram priority signalised junctions</p> <p>Starr Gate tram control</p>
SCADA	11km

Appendix C – Management KPIs

Strategic Aim	Level of Service	Management KPI							
		Ref	Title	Definition	Recording Frequency	Reporting Frequency	Target		
							Excellent	Good	Acceptable
Objective 1: To manage and operate an Accessible, Reliable & Sustainable Tramway Network	Reduce the number of disruptions to the scheduled service								
Objective 2: To maintain the Tramway so it continues to be safe to operate and use	Reduce legal exposure and liability for insurance claims.								
	Reduce the fatalities, serious injuries and light injuries on the Tramway.								
	Repair or make safe Tramway defects which have a high potential of causing damage to Tramway operators and users within prescribed timescales.								
Objective 3: To ensure we inform and communicate with key stakeholders to optimise the Tramway's social and economic value	Attain a high level of satisfaction with accurate, timely information.								
	Provide feedback mechanisms to/from key stakeholders.								

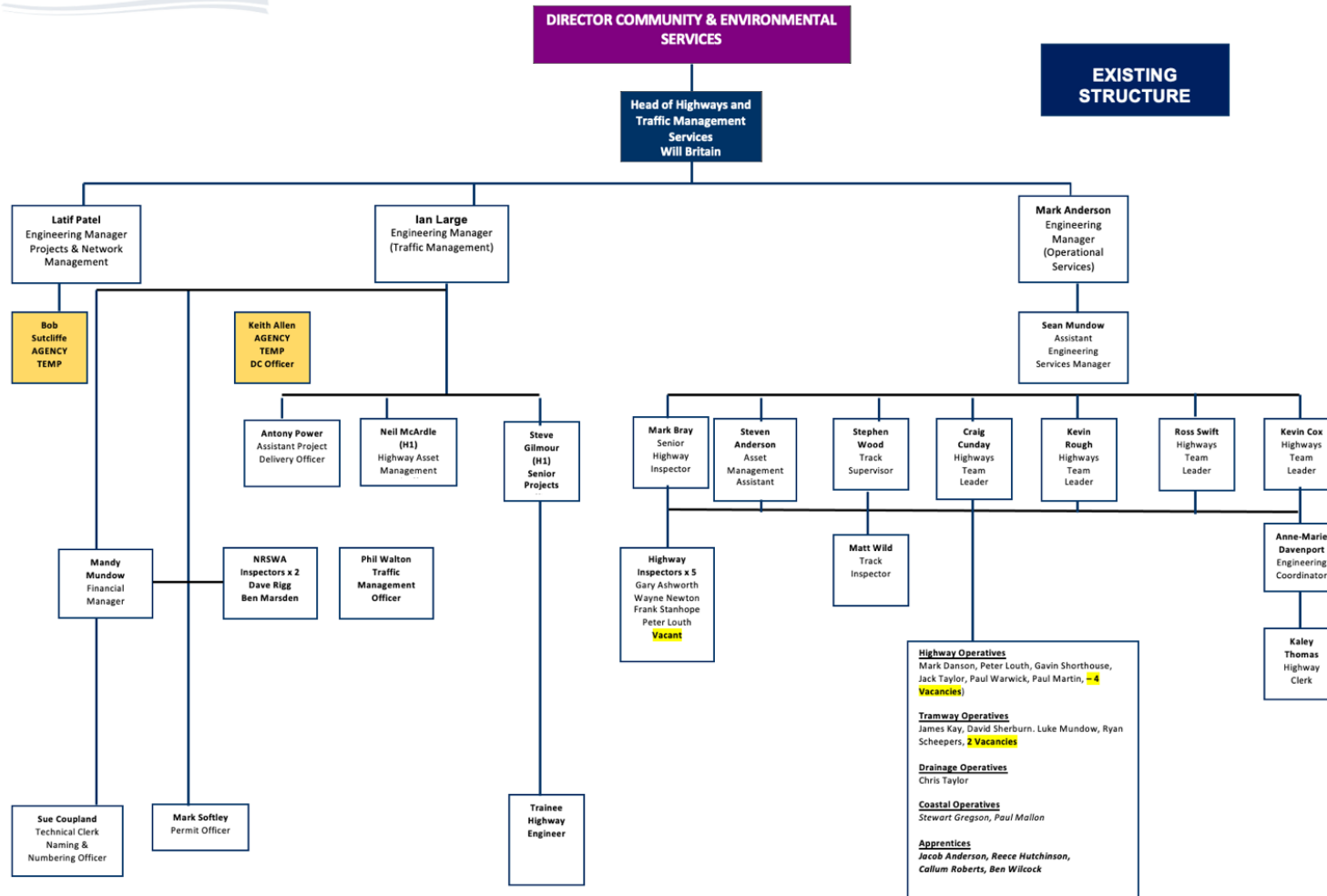
Appendix D – List of Track Services Work Activity Plans

Number	Title	Date	Issued	Revision
TWY-WAP-000	Master List	May 2021	June 2021	1.0
TWY-WAP-001	Cleaning of Motorised Points at Starr Gate	May 2021	June 2021	6.0
TWY-WAP-002	Points Cleaning	May 2021	June 2021	6.0
TWY-WAP-003	Platform Datum Plate Checks	May 2021	June 2021	6.0
TWY-WAP-004	Cleaning and Maintenance of Manual Points	May 2021	June 2021	6.0
TWY-WAP-005	Replacement of Defective Concrete Sleepers	May 2021	June 2021	6.0
TWY-WAP-006	Track Inspection	May 2021	June 2021	6.0
TWY-WAP-007	NOT USED			
TWY-WAP-008	NOT USED			
TWY-WAP-009	Weed Spraying	May 2021	June 2021	6.0
TWY-WAP-010	Replacement of Defective Concrete Fence Panels	May 2021	June 2021	6.0
TWY-WAP-011	Saw Cutting of Concrete and Tarmac	May 2021	June 2021	6.0
TWY-WAP-012	Concrete and Tarmac Reinstatement Works	May 2021	June 2021	6.0
TWY-WAP-013	Replacement of Defective Rails – CONTRACTOR			
TWY-WAP-014	Delivery of Materials to Site	May 2021	June 2021	6.0
TWY-WAP-015	Track Inspection within Depots	May 2021	June 2021	6.0
TWY-WAP-016	Cleaning and Jetting of Track Drains	May 2021	June 2021	6.0
TWY-WAP-017	NOT USED			
TWY-WAP-018	NOT USED			
TWY-WAP-019	Plain Line Tamping – CONTRACTOR			
TWY-WAP-020	Hand Packing Ballast All Locations	May 2021	June 2021	6.0
TWY-WAP-021	NOT USED			
TWY-WAP-022	NOT USED			
TWY-WAP-023	Track Geometry Survey	May 2021	June 2021	6.0

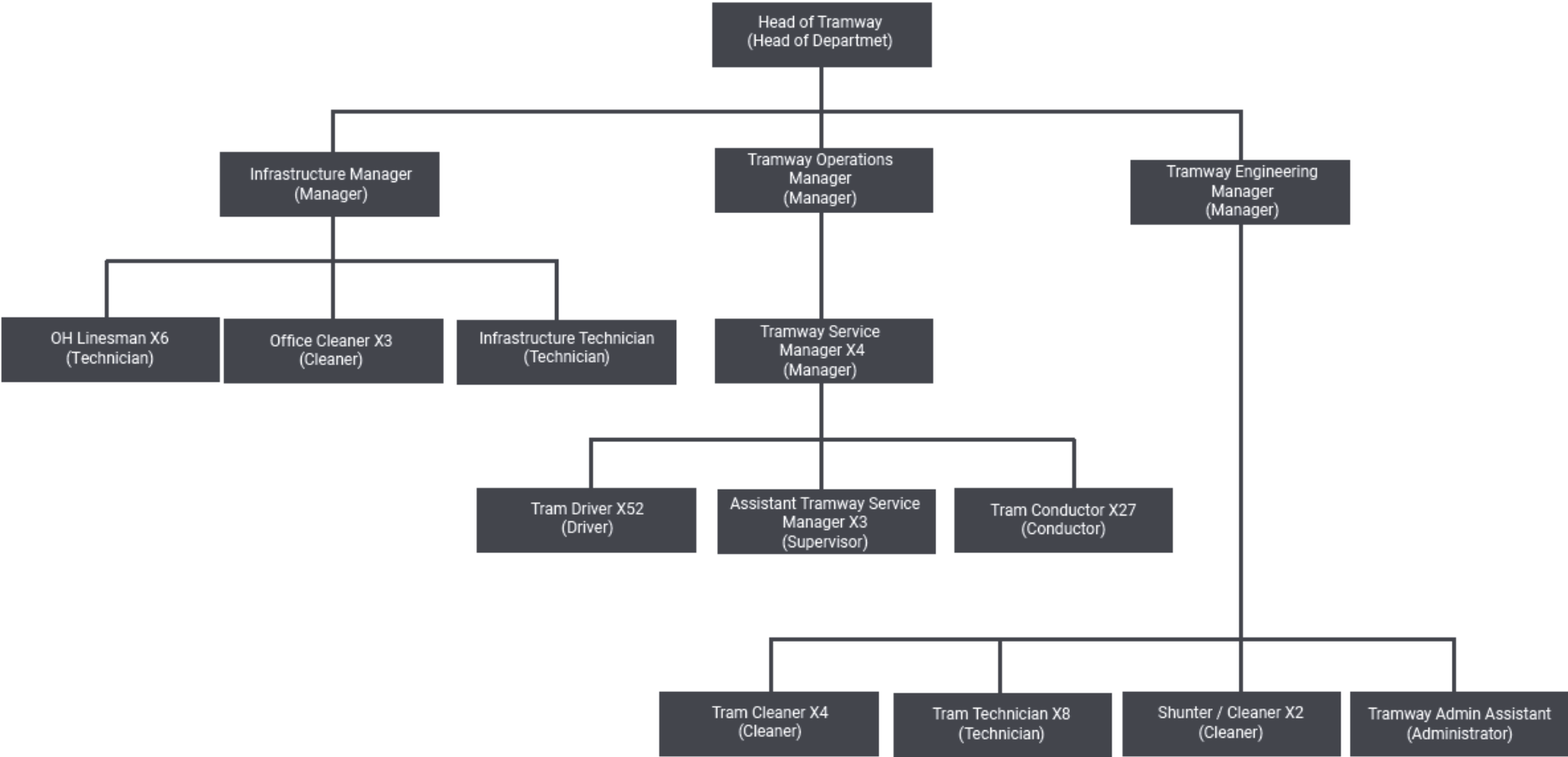
Appendix E – Tramway Valuation

Tramway Valuation Q4/2021							
Item	Unit	Quantity	Unit Price (£) - (1)	Base Year	Base Year BCI (3)	Inflation Factor	Estimated Cost @ Q4/2021
Track Services Assets							
Track - paved	m	10100	790	Q4/2009	150	1.247	9,947,153
Track - open ballast	m	8100	1,620	Q4/2009	150	1.247	16,358,760
Points (4)	No	82	15,000	Q4/2021	187	1.000	1,230,000
OLE Poles (5),(6)	No	606	2,000	Q4/2021	187	1.000	1,212,000
Platforms & Associated Furniture	No	61	85,000	Q2/2005	128	1.461	7,574,961
Fencing	m	9000	50	Q2/2005	128	1.461	657,422
Signs (4),(5)	No	606	500	Q4/2021	187	1.000	303,000
Drainage Systems (4)	item	1	2,000,000	Q4/2021	187	1.000	2,000,000
						Sub-total	39,283,296
						Project Costs & Risk @ 15%	5,892,494
						Total TS Asset Costs	45,175,791
BTS Assets							
Bombardier Flexity2 Fleet	No	18	1,300,000	Q2/2005	128	1.461	34,185,938
Heritage Fleet (7)	No	20	1,300,000	Q2/2005	128	1.461	37,984,375
Depot - Starr Gate	item	1	8,500,000	Q2/2005	128	1.461	12,417,969
Depot - Rigby Road (8)	item	1	8,500,000	Q2/2005	128	1.461	12,417,969
Other station structures (4)	item	1	2,000,000	Q4/2021	187	1.000	2,000,000
Sub-stations & distribution Network	item	1	2,500,000	Q4/2021	187	1.000	2,500,000
OLE (ex poles)	item	1	800,000	Q2/2005	128	1.461	1,168,750
Tram Detection System	item	1	2,000,000	Q4/2021	187	1.000	2,000,000
SCADA	item	1	2,000,000	Q4/2021	187	1.000	2,000,000
Ticketing Vending Machines	item	1	500,000	Q4/2021	187	1.000	500,000
						Sub-total	107,175,000
						Project Costs & Risk @ 15%	16,076,250
						Total TS Asset Costs	123,251,250
Notes							
1. Where possible, unit price extracted from the Blackpool and Fleetwood Tramway Scheme Cost Report (Nov 2009) which was originally used to establish a budget for the improvement works completed in 2012.							
2. Unit costs include for costs of installation							
3. Inflation factor extracted from the RCIS Building Cost Index (BPI). Factor for Q4/2021 BCI = 187							
4. Cost of these items is a guestimate							
5. Quantity assumed to be at 30m centres along the whole length of the track							
6 OLE pole cost assumed to be the same as an ornate light column cost							
7. The cost of the Heritage Fleet is of course impossible to estimate since replacing like with like would be very difficult. For the purpose of valuation, it is assumed that the Heritage Fleet would be replaced with New Fleet (Flexity2) trams							
8. Costs of replacement of Rigby Road Depot assumed to be the same as required for Starr Gate Depot							

Appendix F – Organisation Charts



Tramway Departmental Structure



Appendix G – Tramway Asset Management Action Plan

Ref	Theme	Item	Description	Time-scale
Tramway Asset Management Strategy (TAMS) – ongoing updates				
1	Introduction	TAMS	TAMS to be reviewed and updated	Annual
Tramway Asset Management Strategy (TAMS) – actions required				
9.0	Safety & Risk	SMS, Risk Registers & BCM Plans	TS and BTS documents to be compared to ensure alignment	Urgent
10.2 / 11.0	Governance / Funding	LCC Agreement	2013 LCC Agreement to be reviewed and updated	Urgent
10.3	Governance	Tramway Operating & Maintenance Agreement	Tramway O&M Agreement to be reviewed and updated and signed-off	Urgent
10.4	Governance	Tramway Infrastructure Improvement Committee	Review and update Terms of Reference and ensure meetings held regularly	Urgent
Tramway Asset Management Plan (TAMP) – ongoing updates				
1	Introduction	TAMP	TAMP to be reviewed and updated	Annual
3.1	Communications	Communications Plan	Review and update	Annual
3.2	Communications	Stakeholders	Review and update	Annual
3.6	Communications	Customer Surveys	Review and update outcomes	Annual

6.0	Safety & Risk	Risk Registers	Review and update	Annual
4.2.3 / App C	Performance	Management KPIs	Review and update after development	Annual
4.6	Performance			As required
5.2.1 / App E	Maintenance Methods	Work Activity Plans	Develop outstanding Work Activity Plans (WAPs)	As required
8.7	Lifecycle Planning	Lifecycle planning processes	Review and update	Annual
8.7	Lifecycle Planning	BTS Annual Plans	Annual Maintenance Plan and Annual Refurbishment Plan after initial development	Annual
8.8	Works Planning	Forward Programme of Works	Assessment of planned capital works	Annual

Tramway Asset Management Plan (TAMP) – actions required

4.2.3 / App C	Performance	Management KPIs	To be developed	Urgent
6.0	Safety & Risk Management	Safety	Implementing the recommendations made as a result of the investigations into the fatality at Fleetwood Road	As soon as possible after completion of the investigations
8.7	Lifecycle Planning	BTS Annual Plans	BTS to develop an Annual Maintenance Plan and Annual Refurbishment Plan	As soon as possible – July 2023 latest

