

**Title of meeting:** Cabinet Transport and Transportation meeting  
**Date of meeting:** 23<sup>rd</sup> March 2023  
**Subject:** Tertiary Roads Inspection and Repair  
**Report by:** Tristan Samuels, Director Regeneration  
**Author:** Eleni Oulasoglou, PFI Technical Officer  
**Wards affected:** All Wards  
**Key decision:** Yes  
**Full Council decision:** No

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**1. Purpose of report**

To inform members of the frequency of inspections and the process around decision making relating to the resurfacing of roads.

**2. Recommendations**

**It is recommended that the Cabinet Member for Traffic and Transportation;**

- 2.1 Approves that the plans and timings of inspections of the tertiary road network are shared with all Ward Councillors;**
- 2.2 Approves that the report on the condition of the roads that follows these inspections is shared with all Ward Councillors;**
- 2.3 Notes that the decision by the cabinet member is brought to the public Traffic and Transportation decision meeting for information.**

**3. Background**

- 3.1 Portsmouth City Council roads are divided up into three types (as shown in Appendix A).
  - 1. Primary (all the main roads in and around the city)
  - 2. Secondary (ie Allaway Avenue, Elkstone Road, Ludlow Road, Port Way etc)
  - 3. Tertiary (roads providing access to residential areas)

- 3.2 The council keeps these roads up to an agreed condition through the PFI contract with Colas. The condition to which a road is maintained is defined by its strategic importance, the number and type of vehicles that travel along the road and the need for safe provision for all road users.
- 3.3 Maintenance of the major roads is important because we need to keep the city moving and help support a strong economy and growth as well as good public transport services through a high-quality transport network. These roads carry a lot of cars, heavy lorries and buses so their continual upkeep is very important.
- 3.4 Minor roads such as the tertiary road network are important too because they are part of the environment that exists outside people's front doors; where people park and part of their journey at the start and end of the day. However, the volume of traffic on these roads is much less and with significantly fewer heavy vehicles than the major roads.
- 3.5 The focus of this report is on the condition of the tertiary road network, how and when these roads are inspected and how a decision is reached on which roads should undergo treatment. The methodology for lifecycle works for Primary and Secondary roads is included in Appendix B.

#### **4. Strategy**

- 4.1 The strategy around the rehabilitation of roads throughout the city was developed as part of the PFI highway maintenance contract. It included clear objectives around achieving best value for money.
- 4.2 Due to financial constraints the rehabilitation of the tertiary roads in the early years of the contract was excluded. Instead, PCC and Colas agreed to the Tertiary Network Fund mechanism" as described below in this report.
- 4.3 Along with the Tertiary Network Fund, a strategy was developed for accessing the condition and need of the Tertiary roads and achieving optimum and impartial approach to rehabilitation and repair. Full details of this strategy and the process by which it is delivered is included in Appendix C.

#### **5. Inspections**

- 5.1 Every road in the city is inspected by an Accredited Inspection Company once every four years; See Appendix D for details. This includes the tertiary road network and regarding these, an inspection report is submitted to PCC once a year.
- 5.2 This report includes the names of the roads that were inspected, photos, technical data regarding the condition of the road and a condition "score" that is a result of the combined metrics of the inspection. The higher the "score", the better the condition of the road.
- 5.3 Importantly, there are other cyclic inspections of the roads within Portsmouth, significantly regular safety inspections. The safety inspections are carried out on a

six-monthly programme. So, while the main surveys are every 4 years, safety is more regularly assessed.

#### Condition "Score" (Network Condition Index)

- 5.4 Roads are generally made out of asphalt (sometimes referred to as bitumen) or concrete. For asphalt roads, if the road has a condition score of 3.02 or above (and not more than 30% of it has patching), then it is deemed not to require full repair or replacement. Concrete roads only to require treatment if they show signs of "structural deterioration".

#### Method of Repair

##### a) Asphalt/Bituminous Roads:

- 5.5 Bituminous roads are constructed in layers namely base course, binder course and surface course. These layers are made of different materials and provides different functions to the bituminous pavement. This allows for bituminous constructed roads to be maintained in thin layers.

- *Base course in a bituminous pavement consists of mineral aggregates such as gravel, stones and sands bonded together with bituminous materials. This layer is the principal structural layer, used as a foundation and accepts all the loading for the surfacing.*
- *Binder course is "lower part of the surfacing", and it is typically made of a type of asphalt concrete with different gradings of aggregates and types and quantities of binder depending on the particular needs of the road being built. It waterproofs the base and also accepts part of the loading form the surface course.*
- *Surface course is a mixture of bitumen-bound mineral aggregate carefully proportioned and mixed to the required specification. It can withstand the forces of traffic, transferring the loads to lower layers, and provides weather resistance, skid resistance and low traffic noise, among others.*

- 5.6 Depending on the scoring, the visual inspections, other tests and the trial holes (where necessary) as detailed in Appendix B, Colas propose the type of rehabilitation. In most cases only the surface course is removed and resurfaced. This is normally the top 40mm.

- 5.7 Where there are localised areas or sections of a road that are requiring strengthening then the binder course is also renewed or increased.

##### b) Concrete Roads:

- 5.8 Concrete roads cannot be resurfaced in layers like asphalt roads and would require the whole carriageway slab to be replaced if it failed.

- 5.9 That being said, concrete roads perform well under loads and they are considered in effect to be "stronger" than asphalt roads.

- 5.10 The form of construction of many concrete roads in Portsmouth includes a thin layer of "surface dressing" (asphalt) on top. In time, the surface breaks away leaving patches of concrete exposed but this has little effect on the structural integrity of the road overall. Although this is not aesthetically pleasing it does not necessarily indicate the road has to be resurfaced.
- 5.11 Cosmetic repairs sit outside the scope of the TRN fund and the as detailed in the '*TRN Vision, Strategy and Methodology*' report agreed by T&T on Dec 2016. For this to be considered, a significant amount of money and officers hours is required that the Council should be prepared to fund.
- 5.12 Contractually, potholes and small area decompressions greater than 20mm in depth that are creating or are likely to create a hazard should be prevented or remedy by the PFI Contractor on carriageways, cycleways, footways and alleyways. The requirement for treatment in other authorities nationally is typically a depth greater of 40mm. Current practice is also moving towards a more risk-based approach, rather than a fixed, rigid standard.

#### Reporting

- 5.12 When the inspections of the roads are finalised, the raw data is processed and a Network Condition Index is calculated. This is presented in a report that also includes details of the surveys and raw data, construction data, surveyable network, coarse visual inspections, independent auditing is produced.
- 5.13 Simple visual inspections of 25% of the tertiary network are completed between October and November each year. The final report is submitted to PCC In March the following year. After this submission, the process detailed in Appendix B is followed.

#### Decision to Repair Roads

- 5.14 The inspection report is shared with the cabinet member for Traffic and Transportation. Together with the report, comes a recommendation from officers to repair those roads with the lowest "score". This recommendation takes into account cost (budget estimate is prepared by Colas and programme of works) and other planned works. For example, a road with a low number may be recommended for repair except if that same road was soon to be changed or resurfaced as part of another capital scheme.

#### Publicising the Inspections

- 5.15 To date, the plans and timings of inspections are not published to ward members. However, this could be implemented and may benefit Ward Councillors in their understanding of the works that are being undertaken in their area. Likewise, the annual inspection report can be shared to all Councillors together with the decision made by the cabinet member for Traffic and Transportation.

### **6. Budget for Tertiary Road Network**

- 6.1 Under the PFI contract, Colas has to deposit £200,000 (indexed) from year 6 to 20 into the Tertiary Road Network Fund and to use this to pay for works on Tertiary Network. The fund is only for resurfacing because maintenance (keeping the road to a minimum and safe standard) is included in the PFI contract.
- 6.2 There is currently £620,000 (excluding works for this year Tertiary programme) in the fund and there are only two years left that money will continue to be deposited.

## **7. Reasons for recommendations**

- 7.1 As per Full Council request on 8<sup>th</sup> November 2022.

## **8. Integrated impact assessment**

An Integrated Impact Assessment is not required.

## **9. Legal implications**

- 9.1 There are no legal implications arising directly from the recommendations in this report.
- 9.2 The practices and procedures described in the report assist the City Council in fulfilling its statutory duty, as highway authority, to maintain highways which are maintainable at the public expense (section 41(1) Highways Act 1980).

## **10. Director of Finance's comments**

- 10.1 There are no direct financial implications of approving the recommendations within this report.
- 10.2 Future works carried out on the Tertiary Network will be met from the Contractual arrangements included within the Highways Maintenance Contract.
- 10.3 The Council should to be mindful of the resources that it has available and therefore the treatments that are applied to the Tertiary Road Network need to be based on providing Value for money with the limited funds available.
- 10.4 Any funds that remain in the Tertiary Network Bank account in year 20 (2024), prior to hand back will accrue to the Council, the contract does however state that the Council needs to use "Best Endeavours" to spend at least £500,000 (indexed) in a three year rolling period.

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Signed by:

**Appendices:**

**Background list of documents: Section 100D of the Local Government Act 1972**

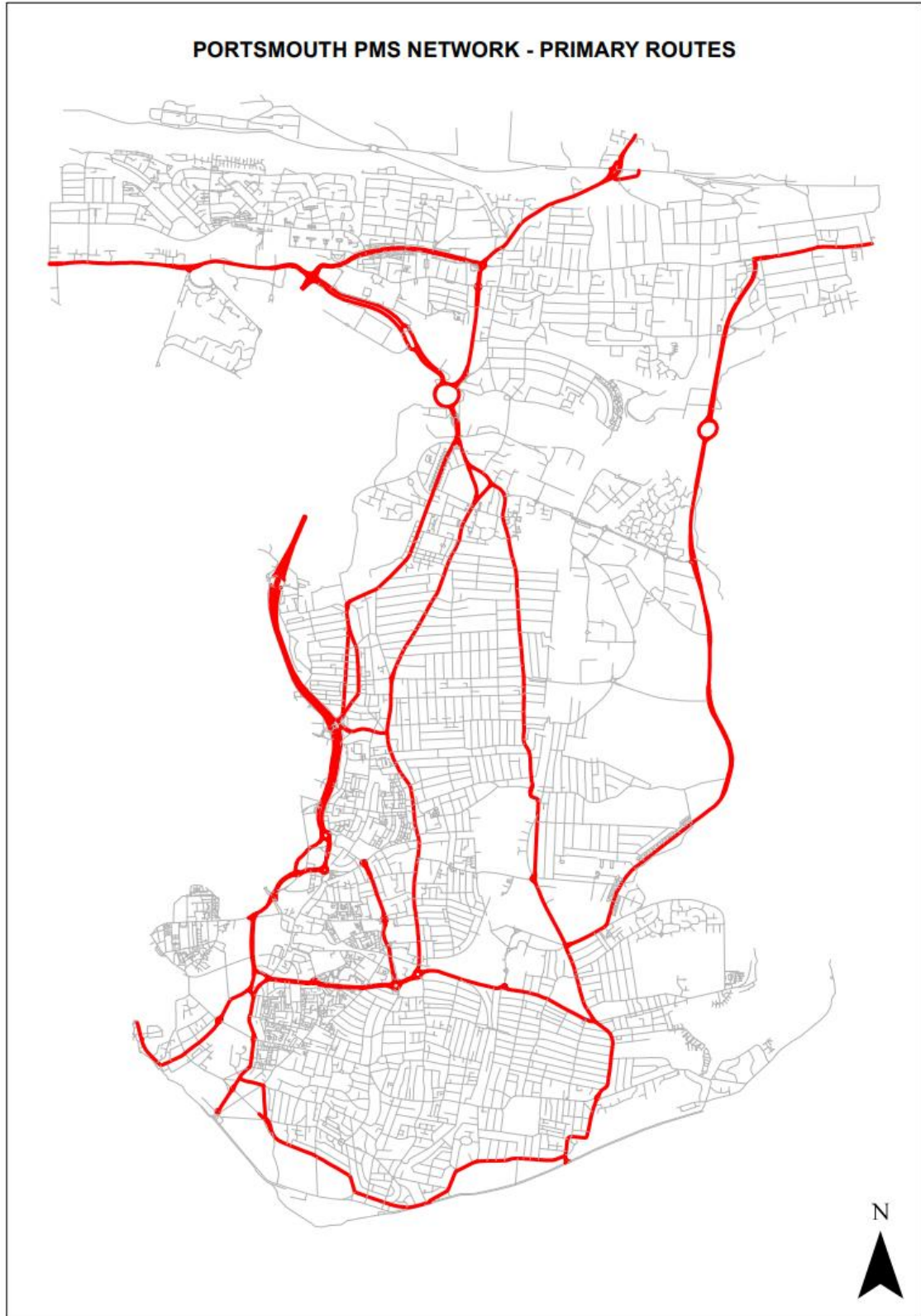
The following documents disclose facts or matters, which have been relied upon to a material extent by the author in preparing this report:

<b>Title of document</b>	<b>Location</b>
Defined Road Network by Road Category	Appendix A
Methodology for Lifecycle works for Primary and Secondary Network	Appendix B:
Strategy for Tertiary Network Lifecycle Works	Appendix C
Programme of Surveys and Definitions	Appendix D

The recommendation(s) set out above were approved/ approved as amended/ deferred/ rejected by ..... on .....

.....  
Signed by:

**Appendix A: Defined Road Network by Road Category**





**PORTSMOUTH PMS NETWORK - SECONDARY ROUTES**







**PORTSMOUTH PMS NETWORK - TERTIARY ROUTES**



## **Appendix B: Methodology for Lifecycle works for Primary and Secondary Network**

The prioritisation of the Carriageway schemes for the Annual Programme is based on the following considerations:

- Individual condition indices of scheme sections (based on annual surveys)\*
- Accident data
- Site condition validation information
- The identification of Structures schemes are based on the defects highlighted by the General and Principal Inspections.
- The identification of traffic signal LCR schemes is based upon surveys and recommendations provided by Colas' ITS department. Scheme Selection.
- The approach for selection of schemes for the Annual Programme has remained the same as the previous years and is based on the following parameters:
  - Financial constraints
  - Technical requirements
  - Safety & local issues
  - Consistency & homogeneity
  - Public perception Scheduling Special Events

When considering when works are to take place on the Project Network which will have an impact on the free flow of vehicular traffic, reference is made to those Special Events planned to ensure that wherever possible a conflict is avoided. There are three types of events:

- Special Events which occupy all or part of a section of the Project Network
- Events whilst not taking place on the Project Network that might have an impact on users of the Project Network
- Portsmouth Football Club home fixtures Annual Programme

Other potential conflicts Colas has checked the available utilities programmed works while preparing the Annual Programme in order to avoid any potential conflict. Colas and PCC collaborate in order to combine other PCC schemes (LTP) with the lifecycle works TO ensure cost savings to the Council and minimise disruption to road users.

## **Appendix C: Strategy for Tertiary Network Lifecycle Works**

Given that there are limited funds, officers working with Ensign have devised a strategy for treating the Tertiary Network with a view to maximising the value for money of the financial resources it has available.

The strategy focuses on the following objectives:

- To use a selection methodology that allows the Council to accurately assess the condition of the Tertiary Network which in turn allows the Council to treat those roads that are in the poorest condition.
- To ensure that a robust selection process is used so that those Road Section Lengths that support the Council's wider strategic goals are treated as a priority.
- To adopt an investment plan to ensure the appropriate validation and technically sound treatments are applied to the Tertiary Network.
- To ensure that Best Value is achieved through procuring the Tertiary Network works in the most beneficial terms to the Council so that the finite amount of money available can treat the maximum amount of Roads within the confines of the Highways Maintenance Contract
- To maximise the Services provided by the Service Company under the Highways Maintenance Contract to ensure that the Council only procures works that are not already covered by the Service Payment

The above strategy is based on Industry Best Practice and follows guidance documents produced by the UK Roads Liaison Group and the Highways Maintenance Efficiency Program (HMEP).

### **Process by which the strategy is delivered**

The process comprises three distinct stages:

i) The First Stage (Collection of Data):

The first stage is the collection of relevant technical data that allows the Council to fully understand the condition of the Highways Network. This uses a mixture of Industry standard technical surveys, local knowledge and collected data. The data used for the proposed new methodology comes from various sources;

- Surface Condition Index (SCI) obtained as part of the Network Condition Index (NCI) process. This score is based on a Coarse Visual Inspection (CVI) carried out on 25% of the network every year
- Service Inspections Condition (SIC), based on a 100% TRN walked survey and undertaken by accredited Surveyors;
- Reactive Maintenance Data; analyses defect locations and category of defects (by asset and treatment)
- CHAIN Enquiries Public concerns on the carriageway condition;
- Accident records: Skid related accidents derived from Police records;



- Strategic Routes and Amenities: Identifying the location of schools, hospital, emergency services and residential homes on tertiary network and giving priority; g) Safety Inspections condition, comments and recommendations;
- Road sections of concern to PCC.

These data sources have been designed to conform to good industry practice and also take into account public feedback, local knowledge of a non-engineering manner, such as location and the number of issues that have been reported in these locations.

ii) Second Stage (Analysing the data to produce a list of roads to be repaired) :

The second stage is analysing this data and then utilising a statistical based approach a first indicative list is produced.

The list of sections generated by this distribution is then categorised by Strategic Location.

Site validation by in depth visual inspections is then carried out by Ensign/Colas and PCC.

A provisional list of sites to treat from the validation survey is then generated with High, medium and low categories.

iii) Third Stage (Assessment by PCC Engineers)

This list is then assessed by PCC engineers and upon consultation with the Cabinet Member for Traffic and Transportation, the final list is generated. Following that, Ensign prepares the design briefs, programme and budget for final acceptance. This methodology was agreed by T&T in 2016.

iv) Fourth Stage (Construction stage)

Construction works are carried out by Colas.

**Appendix D: Programme of Surveys and Definitions**

<u>Month</u>	<u>Survey</u>
Sept-Oct	Deflectograph - Primary routes only
May- Sept	SCRIM (3 Cycles) - Primary and Secondary routes only
Oct -Nov	Coarse Visual Inspections (CVI)
Throughout the year	Safety Inspections

Notes:

**Deflectograph - measuring road structural condition**

The structural condition of the road to be derived from the measured deflections, given the past traffic loading and the construction of the road pavement.

**SCRIM - Measuring skid resistance**

Skid resistance is a measure of the road surface contribution to the frictional forces developed between a vehicle's tyres and the road when accelerating, braking or cornering. It is generally measured after the road has been wetted and data can be collected in various ways. The method most widely used on roads is the Sideway-force Coefficient Routine Investigation Machine (SCRIM)

**Visual Surveys**

Coarse Visual Inspection – a method of inspecting road condition at network level developed as part of the UK Pavement Management System.