



Portsmouth  
CITY COUNCIL

# Highway Asset Management Plan 2006 - 2008





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# Foreword

by Cllr Alex Bentley, Portsmouth City Council's Executive Member for Traffic and Transportation.

## **I am delighted to fully endorse this first Highway Asset Management Plan (HAMP) produced by the city council.**

Portsmouth has fully embraced asset management principles for highways since it regained unitary status in 1997. This culminated in the launch here last year of Britain's first highway management private finance initiative (PFI).

The partnership between the council and our service provider Ensign Highway Ltd, a subsidiary of the international Colas group, is going from strength to strength to deliver a better highways service.

The concept of asset management is becoming increasingly important for all those responsible for managing highway networks. All highways professionals are fully aware of the need to adequately maintain the infrastructure to ensure safe passage for the public and to provide a sustainable network for future generations, which is why our £500m PFI is so significant for the city.

The innovative 25-year contract is structured around an initial five year 'core investment period' during which major rehabilitation works are being undertaken – followed by 20 years of maintenance.

Peter Hines, Chief Executive of Colas Limited, said:

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*"I am delighted with the progress that has been made in the first year of this 25 year highway contract. Together with Portsmouth City Council, we are building a team that will work openly and honestly, in accordance with the contract documents to manage and progress the standards currently being achieved."*

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Core investment works have been undertaken in every area of the city. During the first year of the contract over 25 kilometres of roads were resurfaced, over 30 kilometres of pavements renewed and more than 1700 street lighting columns replaced. This at a time when road maintenance budgets have been under pressure for many years at many councils.

With asset management there is now a tool to measure the condition of the network and to assign a financial value to the asset, and we warmly welcome these developments in Portsmouth.



# Executive Summary

**It is widely accepted that transport infrastructure is vital to the economic wellbeing of the country. As with most Local Authorities, Portsmouth City Council's road network is the most valuable asset under its control. In the past the management of this vital and valuable asset has not received the attention or funding required for the provision of the optimal state of repair and operation.**

In response to the above, and prior to the DfT advising local authorities to prepare Transport Asset Management Plans (TAMPs), Portsmouth City Council developed the first Highways Management PFI of its kind in the United Kingdom. The contract provides for a private sector service provider to take 'fence-to-fence' responsibility for management of the highway network for 25 years.

The specification is based on whole life costing of the highway and street lighting and is consistent with the policy document Transport 2010, and the Code of Practices for Highway Maintenance Management "Well Maintained Highways", for Street Lighting Management "Well Lit Highways", and the Management of Highway Structures. The scope of the contract also includes street cleansing, gully emptying and associated functions consistent with the 'fence-to-fence' principle.

The contract specification is designed to address a number of key targets identified within the Councils' Community Strategy. Roads, footways, street lighting and community safety are a high priority for residents and visitors to the City.

Network Management commenced on 1 August 2004 with the service provider (Ensign Highways Ltd.) allowed a six-month period to fully mobilise for service delivery.

Risk allocation is strictly in accordance with the principle of allocating risk to the party best able to control that risk and the contract drafting is generally in line with the HM Treasury Standardisation of PFI Contracts (SoPC). The Council acknowledges the residual risk retained in respect of inflation, interest rate changes and future DfT funding through revenue support grant and the Local Transport Plan.

Performance is based on strict specification criteria and the onus for monitoring is placed on Ensign Highways Ltd. The Council has only retained a small number of monitoring staff. Payment to Ensign Highways is based on network availability, performance and usage.

The contract also defines 'handback' condition at the end of the contract period.

The contract goes a long way towards being a holistic Asset Management Plan as envisaged by the DfT. This HAMP document outlines the knowledge, processes and procedures established by the Council and Ensign Highways Ltd. to deliver an asset based highway management service for the City. It also looks at the 'non-PFI' assets which remain directly maintained by the City Council, and the way forward in the implementation and development of a comprehensive highway asset management culture.







# 1. Introduction

## 1.1 Background & Purpose of the Highway Asset Management Plan

This document is the first Highways Asset Management Plan (HAMP) for the City of Portsmouth City Council's (PCC's) highway network. Highway Asset Management is relatively new to local authorities in the UK, and the approach now being promoted is formally set out in the CSS/TAG document "Framework for Highway Asset Management" published in 2004. Portsmouth has embraced this approach by developing the Highway Management PFI contract into a Plan. The introduction of the culture and process involved in better asset management has already started through the PFI contract. However, it will take some time to fully embed this culture into the organisation, and further actions towards this goal are set out in the Plan.

The road network for which PCC is responsible consists of approximately 47 km of Principal Roads (PR), 35 km of non-PR (B and C roads), and 356 km of urban unclassified roads (UC), with over 750 km of footways, and bridges. A length of the M275 motorway is also part of PCC's jurisdiction, but other Motorways and all-purpose trunks roads that traverse the Authority are not part of this plan, and are the responsibility of the Highways Agency.

Portsmouth's geography is unique; bounded by land on only one side, the greater proportion of the city is effectively sited on an island, with only three main road links connecting it to the mainland. This situation has placed the city in a good position to manage its network as a discrete entity, although good links exist with both the other unitary authority in the region and also Hampshire County Council, which adjoins the City to the north.

PCC has already recognised that the highway is the most valuable publicly owned asset managed by the Council but that, prior to the PFI contract, it had not received the attention nor funding required to maintain it in the optimal state of repair, and operation, or to effectively take account of the needs of all our customers.

The HAMP is intended for information and operational use, both for officers within the City Council as well as the PFI contractor, and any others involved in delivering the highway service. It is also available for Council Members within Portsmouth, and to our customers and stakeholders as well as other organisations as required.

## 1.2 Drivers for the HAMP

There are many catalysts for asset management, not least good practice and the achievement of 'value for money'. Importantly, it encourages a performance-based approach to setting levels of service, which covers all aspects of concern to customers such as minimising disruption on the network, improving the street scene, contributing to community safety and many other issues. All of these are recognised within the Highway Management PFI contract.

The Department for Transport (DfT) is encouraging local authorities to prepare Transport Asset Management Plans (TAMPs) as part of the LTP2 process. The HAMP is the first stage in this process. The TAMP will need to look at the broader transport issues both for which the City council is responsible, and with which it interfaces. The TAMP will then establish a clear relationship between its programme and the authority's targets and objectives set out in the LTP2 submission.

A further, more specific, need for the HAMP is to obtain and organise information to support Asset Valuation (AV) as part of the Whole Government Account (WGA) requirement for 2006/07, although the majority of Portsmouth's highway assets (i.e. those included within the PFI) are exempt valuation (see Section 2.2.1).

## 1.3 The new approach to Asset Management Planning

Asset management builds on existing processes and tools to form a continuous improvement framework by using Levels of Service to define needs and expectations, to monitor performance against them and then to identify the most cost effective ways of closing performance gaps. It requires a cultural change, as well as commitment and ownership, at all levels within the organisation. As already mentioned this process has already started in Portsmouth through the PFI contract arrangements.

Key aspects of an AM approach	Effects
Strategic	Taking a long-term view
Systematic	Looking at processes in a more systematic way
Holistic	Taking a 'service-wide' view covering all assets within the highway
Optimal	Trading off competing demands
Focus on 'Outcomes'	Explicitly considering customer needs and expectations
Management operation	Taking a 'whole life' and 'life cycle' approach
Needs based	Explicitly identifying and documenting needs
Informed decision making	Allocating resources based on assessed need

*Table 1.1 New Approach to Asset Management Planning*

The asset management decision-making framework is guided by performance goals, an extended time horizon, economics and engineering principles, and considers a broad range of asset types that include physical as well as human resources. Asset Management provides for the economic assessment of alternative improvements and investment strategy with the whole highway network being treated as single entity. This is fundamentally the 'trade-off' between levels of service and costs, with the aim of providing best value for money in the use of public funds. The PFI contract has been designed with these principles at its core.

The contribution of the local highway network extends far wider than just transport. It is seen as fundamental to the economic, social and environmental 'well-being' of the community, and its management and maintenance must maximise the wider contribution. Therefore, there needs to be a shift to preserving and operating the investment in the local highway network for the full benefit of the community. At the same time the UK public has undergone a change in its view of effective governance, resulting in the increased expectation that all tiers of government will be more accountable and will be managed more like a commercial operation. The Asset Management Plan supports these changes.

The HAMP will be reviewed on a biennial basis to review progress and identify any improvement actions for the next period.



## 2. Context

### 2.1 Scope of Assets and Services

The DfT is encouraging all local authorities to develop Transport Asset Management Plans (TAMPs) as part of the LTP2 process, and to make a clear statement on their progress towards achieving this goal in their submissions in 2006. While the scope of a *Transport* AMP includes every physical asset related to the transport infrastructure owned or maintained by a local authority, in most cases a *Highway* AMP goes a long way towards meeting the objectives of the LTP2.

Portsmouth City Council (PCC) is currently unique in its arrangements for highways management with its pioneering 25 year Highways Management (PFI) contract with Ensign Highways Ltd. as its Service Provider. The contract is delivered through Ensign's subcontractor, Colas Ltd.

The Identification of the scope of the assets and services to include within this initial Highway Asset Management Plan (HAMP) has been largely influenced by the PFI contract. However, the HAMP has provided the first opportunity to also formally consider the highway assets which remain the direct responsibility of the City Council, and to look at the highway service delivery in a more holistic way. This is a further necessary step towards the continuing culture change required within the Council to fully embrace asset management.

The HAMP encompasses:

- All highway assets, and management operations, within the PFI contract (see table 2.1).
- All non-PFI highway assets.
- All interfaces between the highway management function and external activities.

- Highway drainage (incl. pumping stations and storm water overflows)
- Earthworks and embankments
- Footways, cycleways
- Grass cutting and landscape maintenance
- Gully emptying
- Highway structures (incl. bridges)
- Licences and other statutory documents
- Roads (incl. highway maintenance, road markings and studs)
- Routine maintenance
- Safety fencing
- Signs
- Street cleansing
- Street furniture (litter bins and benches etc.)
- Street lighting
- Street trees
- Traffic signal maintenance
- Statutory Undertakers operations
- Winter Maintenance

*Table 2.1 – Scope of Assets in PFI contract*

A phased approach is being adopted towards the development of Portsmouth's Transport Asset Management Plan (TAMP). It being considered necessary to have a robust working HAMP document before that next step is made. This HAMP/TAMP asset split, for non-PFI assets, is highlighted in Table 2.2.



Item	HAMP	TAMP	Comments
Car Parks and Parking Equipmen		✓	Only cleansing activity included in HAMP
Cycle Parks	✓		Inventory to collect
Parking Enforcement		✓	Including on-street parking meters
Public Transport		✓	
Interchanges		✓	
Public Sewers	✓		Water Company assets – highway drainage in PFI – operational aspects only
Cycle Tracks (off highway)		✓	
CCTV (Traffic)		✓	(included in HAMP inventory) UTC/UTMC
PROW's and other off-road footpaths	✓		Includes off-Highways paths and adopted footpaths
Bus shelters & Bus stops		✓	
Urban Traffic Signal Control Room and Systems		✓	
Statutory Undertakers Plant & Equipment, and Private Apparatus	✓		Statutory Undertakers assets – control part of PFI
Sea Defences		✓	Risk and insurance issue
Ferry Port		✓	
Sculptures/ Public Art	✓		Where on-Highway
Fountains	✓		Where on-Highway
Land Drainage	✓		
Watercourses	✓		
Street Name plates	✓		
Highway (other) seats			
Highway & Street Scene enforcement	✓		See 6.2 in HAMP

*Table 2.2 Scope of non-PFI HAMP/TAMP assets and services*



### 2.1.1. Vires

The contract is based upon the discharge of functions conferred by the Highways Act 1980 and the New Roads and Street Works Act 1991.

Powers to enter into the contract are derived from Section 2 of the Local Government Act 2000, Section 111 of the Local Government Act 1972, the Local Authorities (Contracting Out of Highways Functions) Order 1999 and the Local Authorities (Contracting Out of Highways Functions) (England) Order 2001.

### 2.1.2. Stakeholders with an interest in the HAMP

The highway service provided by PCC needs to be responsive to the community, which uses, has an interest in, or is affected by the highway network. It is, therefore, important that stakeholders continue to be consulted and their aspirations considered in the development of this HAMP.

Table 2.3 identifies the relevant stakeholders whose interests have been given broad consideration in the development of this HAMP.

Stakeholder	Interest
Users (motorists, cyclists, pedestrians, passengers).	All outcomes.
Community (residents, businesses, Portsmouth Local Strategic Partnership).	All outcomes. Alignment with Community Strategy.
Transport providers.	Infrastructure links. Improved co-ordination.
Councillors and MPs whose constituencies are within Portsmouth City Council.	Their own ward/locality. The achievement of Council priorities. Good stewardship of financial resources.
Officers/staff	Good practice. Managing enquiries from the public. Improving levels of service.
Investors/developers	Good business environment. Physical and practical restrictions.
Chief Executive/Finance Dept	Better/clearer spending rationale.
Residents associations	Improved consultation and involvement.
Town and Parish Councils (within and adjoining the City)	Improved consultation and involvement.
Department for Transport	Funding. Good practice.

Stakeholder	Interest
Emergency services	Public safety. Access.
Highways Agency	Road network interface issues. Improved co-ordination. Assets maintained on their behalf
Transport providers.	Infrastructure links. Improved co-ordination.
Schools	Accessibility. Safety. Provision.
Environment Agency & DEFRA	Assets maintained on their behalf
Professional organisations	Good practice.
Pressure groups	Anti-social activities. Environment. Transport issues etc.
Neighbouring authorities	Road network interface issues. Improved co-ordination.
Statutory Undertakers (and their contractors)	Works programmes, Co-ordination. Planning.
Disability groups	Accessibility. Safety. Provision.
Ensign Highways Ltd & Colas Ltd	Highways management Contract (PFI)

*Table 2.3 Stakeholders and their interests*

## 2.2 Goals, Policies & Objectives

The City Council's key objective is to improve the quality of life for the people of Portsmouth. The core value and priorities flow from a community strategy and the key concerns of Portsmouth residents, and are:

- Customer focus
- Finding out what our customers need and expect
- Providing services that meet those needs and expectations.
- Ensuring our services are equally assessable to all.

Portsmouth City Council, in partnership with the Local Strategic Partnership (LSP), published the Community Strategy, 2004-2009. It identifies key priorities for the future of the City.

The document sets out the overarching vision for the City, **“Proud of our past: Ambitious for our future”**, along with spending priorities chosen by residents according to a poll undertaken by MORI.

The Highway Management Contract assists in the delivery of these priorities.

PRIORITY	RELEVANT OUTCOME	DELIVERED THROUGH
Community Safety	A city where people feel safer. People freed from the experience of anti-social behaviour	Enhanced street lighting to current modern standards. An effective response to graffiti, fly posting and fly tipping. A visible high profile presence on the street.
Education and Lifelong Learning	Portsmouth children fulfil their potential at school.	Workshops with schools to raise expectation and life opportunities in parallel with awareness of career opportunities
Economic Wellbeing	Economic Wellbeing Providing jobs by attracting investors and helping local businesses to grow People wanting to live and work in the city A city with distinctive culture, established as a major tourist destination.	Employment of local staff and sub-contractors. Ensuring well maintained roads and footways to encourage external investment.
Environment and Transport	Everyone takes responsibility for protecting the environment. People feel safer in their environment. A cleaner, healthier environment. A city of our choice.	A well-maintained highway and footway network. Enhanced street lighting to current modern standards. An effective response to graffiti, fly posting and fly tipping.
Housing	[currently no direct links]	
Health and Social Wellbeing	[currently no direct links]	
Community Involvement	Everyone feels like they belong. Everyone knows how to make their voices heard. A city where everyone can make a difference.	Ensuring good public consultation on maintenance proposals.

Table 2.4 Corporate Priority Themes Delivery

All these priorities are interlinked and are interdependent. It is these interdependencies which allow the city to achieve the best for itself and its residents.

The Corporate Plan links to the Community Strategy, reflecting the key areas of the vision that the City Council will deliver on. It is to this aim that the priority themes above have been established. Figure 2.1 indicates how all elements of the performance management framework are stitched together. Within PCC the linking mechanism is known as the "Golden Thread". This also provides the link from the corporate objectives through Cross-Service plans and Directorate Level Plans, to an individual's objectives, and helps facilitate the City moving towards excellence.

The HAMP has been developed in the above context and outlines the contributions by the various asset groupings. Levels of service have been derived to achieve these visions as part of the PFI contract, and asset management planning process and these have been used to inform the practices to be adopted for maintaining and operating each component of the highway asset.



### The Overall Performance Management Framework

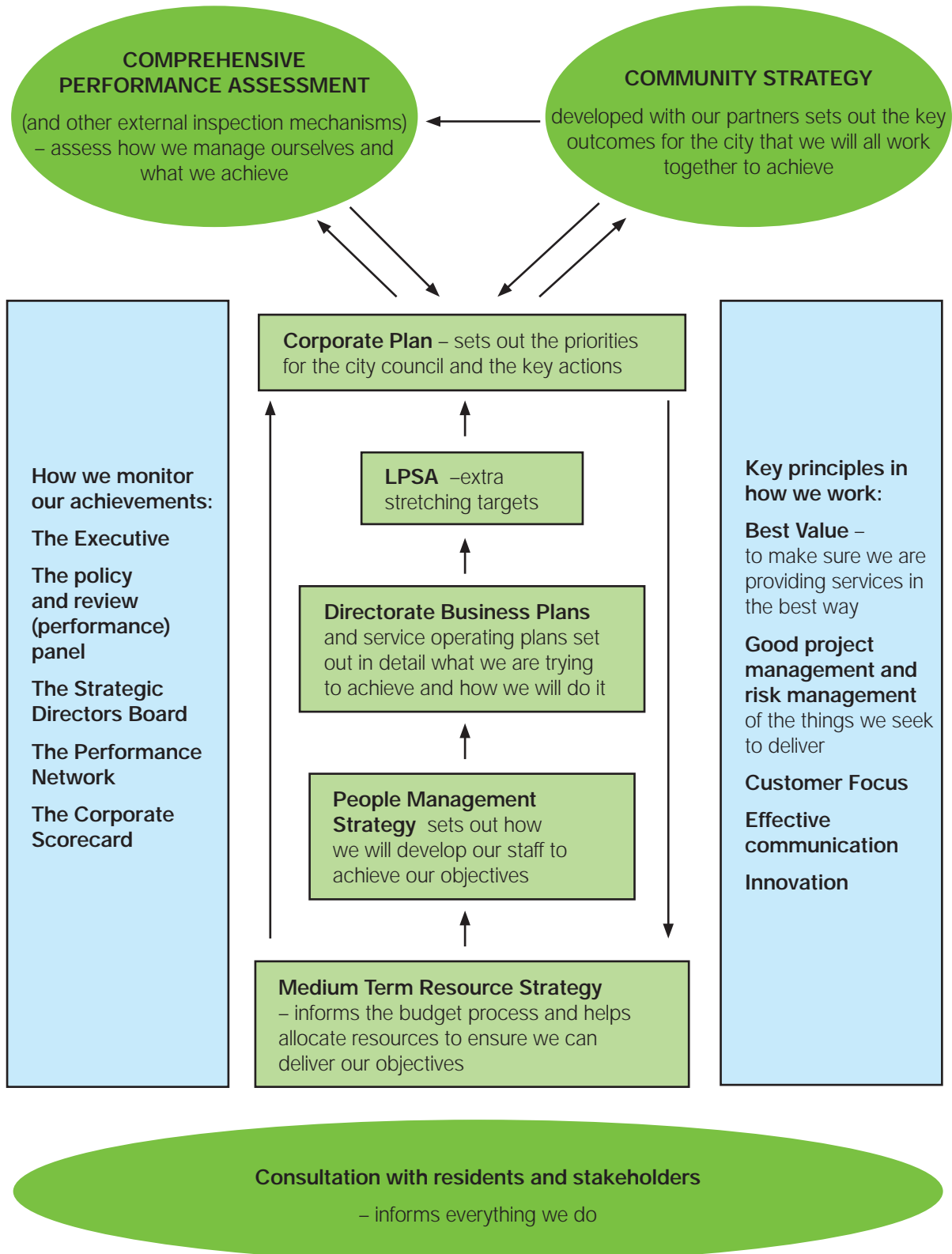


Figure 2.1

## **2.2.1. Public Sector Comparator**

### **2.2.1.1 Treatment of Assets in the Annual Report (Final Accounts)**

In order to achieve central government funding for a PFI contract it is a condition that the project receives an 'off balance sheet' accounting treatment.

In simple terms this means that the balance of risks and rewards in asset ownership are no longer substantially vested in the local authority.

In July 2004 the City Council obtained an accounting opinion from PriceWaterhouseCoopers that the PFI transaction was 'off balance sheet' from the perspective of the Council.

This view was accepted by the District Auditor.

As a result the City Council were required to make a number of changes to the way the Annual Report was presented:

- the highways, highways infrastructure, street lighting columns, illuminated and non-illuminated signs to be treated as 'off balance sheet'
- the annual payments made under the terms of the contract to be treated as the equivalent of revenue charges
- the value of the existing equipment transferred to the operator for nil consideration to be transferred from tangible fixed assets to prepayments and written off over the life of the contract
- a residual interest asset should be built up over the contract term
- there should be a detailed disclosure in the Council's accounts of the nature of the contract and of all future commitments

The City Council is therefore in a different position to every other highway authority in the country that will show highways assets in their balance sheet.

In order to build up the residual value in the balance sheet through the life of the contract an assessment of the asset value accruing year on year will be required.

The basis and methodology for making this calculation has yet to be agreed but a valuation based on accurate inventory data will potentially inform this process.

### **2.2.1.2 Value for Money**

An important objective of the Government's PFI initiative is to create a structure in which value for money is optimised. This will be achieved by private sector innovation and management skills, through the synergies from linking design, build and maintenance, through the efficient allocation of risk, and through the whole life approach to service delivery.

This is demonstrated by comparing the contract value with the same project option procured through a traditional procurement route. This process is known as the public sector comparator.

For the Portsmouth Highway Management contract the Final Business Case indicated a 19% benefit over a traditional procurement.

### **2.2.2. Gershon Savings**

The nature of a PFI contract is that both parties are locked into a long term partnering arrangement that must respond to changes in service requirements however they may arise.

The Government's Gershon initiative to seek 'efficiency' savings across all sectors of public service is applicable to all forms of procurement. It is therefore incumbent on PCC and Colas to review contract performance and seek efficiency savings on an ongoing basis.

This may be achieved in a number of ways from direct cash savings derived from more efficient working practices or a revised specification through to non-cashable savings resulting from more efficient recycling of materials.

## **2.3 Knowledge of the Asset**

### **2.3.1. The Network**

An authoritatively referenced highway network is a prerequisite for asset management. Ideally, all systems involved in managing the various asset components and services should utilise the same network. This approach facilitates data sharing within the organisation and enables a "whole asset" view for decision makers, managers and designers.

Within PCC there are two representations of the highway network currently utilised by various management systems; the National Street Gazetteer and a UKPMS network. The National Street Gazetteer is regarded as the definitive network and the UKPMS network is based upon the National Street Gazetteer. Although the highway network is used both by PCC and Colas, it has commonality through the "Exor" system which is used on both sites.

The network is broken down into the following categories:

Road Class	PCC-owned Network Length (Km's)
M Roads	2.4
A Roads	44.3
B Roads	14.4
C Roads	21.0
U Roads	355.7
Total	437.8

*Table 2.5 Highway Network*

The current "Exor" system can display the highway network visually through Arcview, but very shortly this will be superseded through the implementation of "Exor's" Network Manager 3 which uses an oracle spatial manager to allow the network to be viewed on maps and in a GIS environment.

### 2.3.2. Asset Inventory and Valuation

The development and implementation of the HAMP requires an improved state of information on the extent, nature and condition of the asset, and all of the associated asset components. Whilst the HAMP does not include a detailed schedule of all of the assets held and maintained, it does include information at a high level about total quantities and condition of assets, and in particular it informs a valuation of the asset that is derived from both the quantities and specification of the various asset components, and the extent to which those components are depreciated, derived from condition components.

### 2.3.3. Role of Data and Systems in Asset Management

Whilst the *Framework for Asset Management* asserts that "asset management represents more than simply an integration of existing management systems and data", effective systems, comprehensive, accurate and reliable data and an associated data management regime are nonetheless fundamental to a successful HAMP. Data and computer systems fulfil the following roles within successful Asset Management systems:

- The asset register, comprising inventory of assets
- Systems to integrate data from different asset components for the whole asset
- Condition Assessment, reporting and contract auditing systems
- Systems for calculating and reporting asset value and depreciation
- Systems to allow Performance Monitoring against service levels and targets
- Systems to deliver Best Value and KPI data
- Predictive decision and option appraisal models
- Budgeting tools

In addition, the HAMP describes how effective operational systems will contribute to 'best practice' asset management.

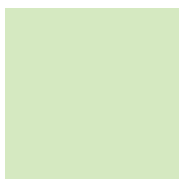


Fundamental to the successful implementation of asset management are the data that describe the various components of the asset and is used in management of the asset. Effective Systems and Data are essential to the successful implementation of Asset Management Plan, contributing to all of the main elements of the HAMP:

- Policies, Strategies & Objectives
- Asset Information
- Levels of Service
- Decision Making
- Performance Monitoring

Data sets typically include:

- Asset Inventory
  - Roads, bridges, footways, lighting.... All assets
- Asset Condition
  - Historical
  - Current
  - Projected
- Operational data
  - Inspections
  - Scheme planning & works
  - Routine Maintenance
  - Winter Maintenance
  - Traffic and congestion
- Customer Enquiries
- Financial data
  - Budgets, expenditure, etc.



### 2.3.4. Current Asset Data and Systems

A Data and Systems review was undertaken in November 2005.

Systems associated with the following aspects of highway asset management are currently in use:

- Definition of the Highway Network
- Highway Condition Data
- Roads and Street Works Act (RASWA) Data
- Corporate Geographic Information System (GIS)
- Other Assets: (e.g. structures)
- Other systems (e.g. claims, winter maintenance etc.)

Table 2.6 gives a 'high level' summary of the findings, and details the data sets and associated systems used in the management of the highway asset, together with an assessment of the current quality of the data.

It is apparent that there is wide variation in the quality, scope and detail of asset data, particularly inventory data. For some asset components, such as street lighting, good quality asset inventory data exists. Other asset components have little or no coverage.

Colas have selected Highways by Exor as the basis of its current asset data management system. Colas are managers of the data for their own and PCC's purposes. PCC have web-based access to all areas of the database, facilitating ease of communication between the Council and the contractor.

Data	System	Coverage	Reliability	Confidence Level	Notes
Highway Network	Exor	100%	E	VG	Base Year
Footways and Cycleways	Exor	100%	E	VG	Base Year
TTS (A roads)	Exor	100% Both directions	E	VG	Surveyed 2005
TTS (B Roads)	Exor	100% 1 Direction	E	VG	Surveyed 2005

Data	System	Coverage	Reliability	Confidence Level	Notes
TTS (C Roads)	Exor	100% 1 Direction	E	VG	Surveyed 2005
CVI (Principal)	Exor	97%	E	VG	Surveyed 2005
CVI (Secondary)	Exor	97%	E	VG	Surveyed 2005
CVI (Tertiary)	Exor	97%	E	VG	Surveyed 2005
DVI (cat 1, 1a & 2 F/way)	Exor	50%	E	VG	Surveyed 2005 57km
DVI (remaining F/way)	Exor	100%	E	VG	Surveyed 2005 164km
Deflectograph (Principal)	Exor	100%	E	VG	Surveyed 2005
SCRIM (Principal)	Exor	100%	E	VG	Surveyed 2005
SCRIM (Secondary)	Exor	100%	E	VG	Surveyed 2005
Safety Inspections <sup>1</sup>	Exor	-	E	E	
Routine Inspections <sup>2</sup>	Exor	Comp	E	E	
Inventory <sup>3</sup>	Exor	Partial	G	G	
Construction	Exor	Typical	VG	G	
Structures (Register)	Exor	Complete	VG	VG	
Structures (Condition Indices)	Exor	Partial	VG	VG	
Drainage	Exor	Initial	G	G	
Streetworks Notices	Exor	General	E	E	
Streetworks Inspection	Exor	Complete	E	E	
Streetlights and Illuminated Signs	Exor	Complete	VG	VG	
Traffic Signals Prefect	Prefect	Complete	VG	VG	

1 Not assessed

2 Not assessed

3 There is currently an inventory review taking place and will be updated as required

**Table 2.6 - 'High-level' summary of Data and Systems**

The method of assessing the quality of each of the data items is based on the following method:

### Coverage

Firstly, the coverage of each data item is assessed:

Coverage	Definition
Nil	No data storage
Initial	Up to 10% held electronically or on paper records
Partial	10-30% held electronically
Typical	30-70% held electronically
General	70-95% held electronically
Complete	>95% held electronically

### Reliability

Secondly, the *reliability* of each data item is assessed:

Reliability	Definition
Very Poor (VP)	Hardly ever correct
Poor (P)	Sometimes correct
Good (G)	Normally correct 50% of the time
Very Good (VG)	Correct most of the time
Excellent (E)	Seldom incorrect



## Confidence Level

Finally, the results are then combined to produce a Confidence Level for each data item using the following matrix:

Confidence Level		Coverage					
		Nil	Initial	Partial	Typical	General	Complete
Reliability	V. Poor	Nil	Low	Low	Low	Medium	Medium
	Poor	Nil	Low	Low	Low	Medium	Medium
	Good	Nil	Low	Low	Medium	Medium	Medium
	V. Good	Nil	Low	Low	Medium	Medium	High
	Excellent	Nil	Low	Low	Medium	Medium	High

Work is in progress to produce a single central inventory of all highway assets. However, various inventory type records of some assets are currently held in different places within Colas, and these are not yet consistently checked for accuracy or completeness.

It is recognised that collecting, and maintaining, a full inventory provides large potential benefits in asset management, which, in the Portsmouth context, may accrue to both the local authority client and also the PFI contractor. An exercise is being undertaken to assess asset inventory data held to identify any significant gaps in relation to asset valuation and maintaining the highway. It will be important to ensure that only those data and attributes that will be of benefit are recorded, and that appropriate standards for data quality and currency are adopted. This exercise involves:

- A review of the inventory data held to identify any significant gaps
- Defining a priority or hierarchy of inventory items
- Developing a programme for the collection of the highest priority inventory data
- The consideration of incorporating the routine collection and updating of inventory information into other activities (e.g. updating inventory information following maintenance etc.)

The programme for delivery of the full inventory is 31 July 2006.



## 3. Levels of Service

### 3.1 Customer Aspirations

The Council has actively monitored public opinion and corporate priorities over a long period through MORI surveys and similar techniques. A consistent theme throughout this period has been concern about pavement and road condition, street lighting and public safety. Table 3.1 details the spending priorities identified by residents in 2002. Furthermore whilst the 2005 Mori survey results have yet to be fully analysed, headline figures show a 22% increase in customer satisfaction with highway maintenance and a 19% increase in customer satisfaction with street cleansing.

Priority	% of Respondents
1. Crime	45%
2. Education	30%
3. Facilities for young people	24%
4. Transport	24%
5. Housing	22%
6. Development of the City	20%
7. Health	19%
8. Local Economy/Jobs	16%
9. Environment	14%
10. Poverty	11%
11. Social Care	10%
12. Facilities and activities for older people	9%
13. Leisure and cultural facilities	7%
14. Make Council Services equally accessible to all	5%
15. Other	3%
16. Don't know	1%

*Table 3.1 - MORI 2002 Residents Survey*

This consultation evolved into the creation of the Local Strategic Partnership (LSP); an umbrella organisation bringing together the public agencies (the Council, Primary Care Trust, University etc.), major local employers and the community network. Together this group has developed the Portsmouth Community Strategy 2004/09, published in April 2004 (see Section 2.2).

The Community Strategy targets includes:

- investment in transport infrastructure
- a reduction in road accident casualties
- traffic management to reduce congestion and improve air quality
- an improvement in road and footway condition
- reduction in litter and graffiti
- economic wellbeing
- community safety

Alongside the specific market research undertaken by the City Council, the County Surveyor's Society (CSS) undertakes an annual survey assessing public opinion on transport in Britain. In 2005 this identified that opinions were fairly evenly divided on satisfaction with road maintenance.

The Highways Management Contract 'Core Service' Requirements are designed to contribute significantly to targets set in the Community Strategy and to improving satisfaction levels with the service. These requirements are a detailed description of the whole range of services expected from Colas covering maintenance of the highway, bridges and drainage, the level of street lighting required, the best value reporting, street cleansing, gully emptying, grounds maintenance, tree works, traffic signal maintenance and on-site traffic management. It is intended to be a close description of "fence-to-fence" management of the road network.

Colas must also accord with Good Industry Practice, the level of service expected from a skilled operator in this area, and with Highway Standards (a list which includes manuals and the highways Code of Practice published by the Department for Transport).

The required standard of performance also comprises other elements such as not causing injury to health, liaising with parties affected by the Service and not detracting from PCC's image as highway authority. All parts of the Service must comply with quality management standards e.g. ISO 9000.

Alongside the technical maintenance performance targets set in the contract, the public have a level of expectation relating to quality of life and the influence that the highway network can have on that. The public have their own experiential measures of quality in relation to the highway service which often focuses on non-technical issues such as cleanliness and the prompt response to complaints. Whilst most technical targets are linked to service payment deductions, it is clear that there are low-level issues which must be incentivised to ensure they are addressed effectively.

Within the contract, Service Points achieve this incentivisation. They are awarded by PCC for continuous and persistent breach of service that would otherwise not attract payment deductions. Schedule 17 of the contract describes the type of breach and the level of Service Points that may be awarded by PCC. This list is not exhaustive. Service Points accumulate on a rolling annual basis and can lead to increased supervision by PCC and ultimately termination of the contract. The award of service points is of keen interest to the funders.



The contract acknowledges that over the 25 year life of the contract there will be significant change not only in terms of changing patterns of travel and transport but also in terms of the extent of the highway network and expectations in service delivery. Accordingly there is a robust change mechanism included in the contract. The Council has the right at any time to require a variation in the design, quality or quantity of the Service. This will be a "Council Change" and as a safeguard there is a mechanism under which Colas may object to the Change if it is unreasonable or unsafe, and also may be compensated if it will increase costs or reduce revenues.

### 3.2 Outcome Service Levels

A very important principle of an asset management plan is to focus objectives on outcomes. In Portsmouth, desired levels of service were linked in the contract to targets that seek to deliver a service that is at least equivalent to the Code of Practice for Maintenance Management current at the time (CSS, 2001). Prior to award of the PFI contract, DfT employed specialist advisers to review and audit this, and Council members also approved the service level outcome targets within the contract.

### 3.3 Measurement of Performance

The PFI contract has clearly defined performance measurement procedures and methods, (in particular in Schedule 4, Part 2 [Service Performance Measurement Methodology] and in the Method Statement for Inspections, Assessments & Performance Monitoring). These have been designed to deliver the outcome service levels referred to above.



#### 3.3.1. Condition Assessment

The condition of each section, and the network as a whole, is determined using a set of indices specifically devised for the PFI contract. The overall condition is measured using the Network Condition Index (NCI), which is obtained from the scores given by the three component condition indices: Pavement Condition Index (PCI), Skid Resistance Index (SRI) and Surface Condition Index (SCI). The indices used to calculate the NCI depend on whether the section is part of the Principal, Secondary or Tertiary Network.

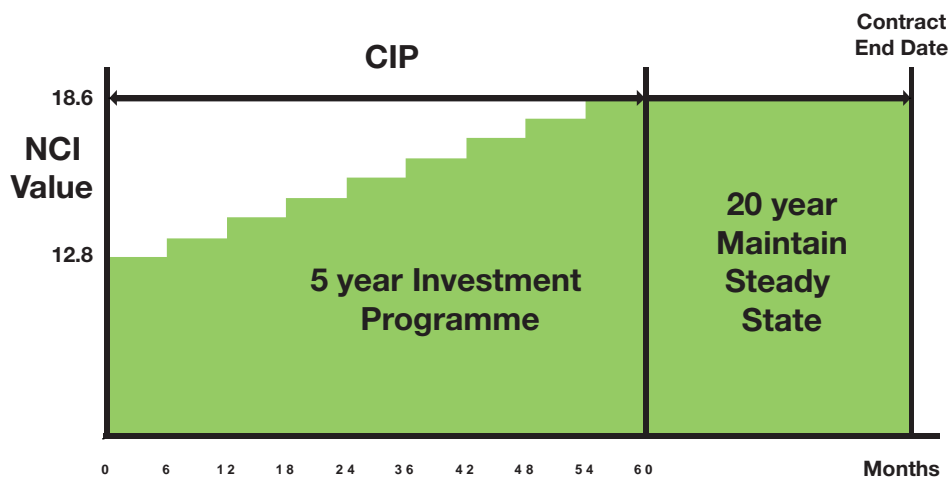
The *Pavement Condition Index* determines the structural integrity of the pavement and is measured using Deflectograph readings which are processed to give the residual life. The PCI takes values in the range -1 to +20, where -1 represents a failed section where reconstruction is required (residual life less than 0). A PCI of +20 represents a section in excellent condition with a residual life of greater than 20 years.

The *Skid Resistance Index* measures the actual skidding resistance obtained from SCRIM compared to Investigatory Levels relating to the particular category of site, under defined levels of risk rating. The SRI takes values in the range 0.8 to 5.0, where 0.8 represents a failed section in which more than 30% of the lane length has SCRIM readings below Investigatory Levels. A SRI of 5.0 represents a section in excellent condition with no readings below Investigatory Level and an average reading of more than 10 points above.

The *Surface Condition Index* is ascertained through the use of Coarse or Detailed Visual Inspection Surveys as used in UKPMS. The SCI takes values in the range 0.8 to 5.0 for the Principal Network and the range 1.6 to 10.0 for the Secondary and Tertiary Networks. The minimum value represents a failed section where the pavement is completely deteriorated indicating a loss of structural integrity. A maximum SCI value represents a section in excellent condition, i.e. new or nearly new with no rutting, cracks etc.

The PCI, SRI and SCI are all calculated on a section and network level. For the Principal Network the NCI is obtained by summing the PCI, SRI and SCI values giving a value in the range 0.6 to 30.0. For the Secondary Network the NCI is obtained by summing only the SRI and the SCI values giving a value in the range 2.4 to 15.0. For the Tertiary Network the NCI is derived solely from the SCI giving a value in the range 1.6 to 10

For the Principal Network the NCI is calculated at intervals of 6 months throughout the Core Investment Period and annually thereafter. An overall NCI of 12.8 was taken as a baseline at the start of the contract and improvement target values are given for each 6 monthly assessment, progressing to a target NCI value of 18.6 (fair to good) at the end of the initial 5 year Core Investment Period. The network is then to be maintained to at least this level for the remaining 20 years of the contract, with no section deemed to be in a failed condition.



For the Secondary Network the NCI is also calculated at intervals of 6 months throughout the Core Investment Period and annually thereafter. A target NCI value of 9.9 is required at the end of the 5 year Core Investment Period. The network is then to be maintained to at least this level for the remaining 20 years of the contract, with no section deemed to be in a failed condition.

For the Tertiary Network the target NCI value at the end of the Core Investment Period is 3.02, and no section is to be in a failed condition.

In addition to the NCI used to measure the carriageway performance, there is a Footway Condition Index (FCI) to measure the condition of the footways, derived from visual inspection. At the end of the Core Investment Period the target FCI value for the Network is to be 4.8.

### 3.3.2. Inspections

All safety and service inspections are linked as an input to the Monthly Availability Report, detailing any 'deemed lane closures' as result of corrective action to a notified defect being outside its grace period.

- **Safety Inspections**

Safety inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network or the wider community. Such defects should include those that will require urgent attention (within 24 hours) as well as those where locations and sizes are such that longer periods of response would be acceptable.

The three road network hierarchies are used as the basis for inspections, supplemented by the footway hierarchy. This follows the general principle that factors other than simply road class are taken into consideration, including traffic use, characteristics etc. The categorisation of roads in the network into the inspection hierarchies (Principal, Secondary, Tertiary, and Pedestrian) will be kept under review at the same time as the network itself is maintained and updated. The default inspection frequencies will be kept continuously under review during the contract. In addition to the scheduled safety inspections, additional inspections may be required in response to incidents.

The carriageway safety inspection frequencies are every 28 days for the Principal Network, and Secondary Network and every 6 months for the Tertiary Network. Frequencies are also defined for footways (by hierarchy) and cycleways (by location relative to the carriageway). Safety inspections on footways are generally walked, but are also carried out from a moving vehicle where access and visibility permit.

Safety Inspections are conducted in accordance with the RMMS manual and the Local Authority Code of Practice for Maintenance Management. Defects collected will fall into categories 1.1, 1.2 and 2. Colas assign levels of priority to all Category 2 defects at the time of inspection – high, medium or low. Category 1 defects are made safe at the time of inspection if practicable.

Defects identified during safety inspections or as a result of reports and complaints from third parties are to be made safe and repaired permanently in accordance with table 3.2:

	<b>Make safe</b>	<b>Permanent Repair</b>
<b>Category 1.1</b>	1 hour	28 days
<b>Category 1.2</b>	24 hours	28 days
<b>Category 2</b>	N/A	6 months

*Table 3.2 Defect Response Times*

#### • **Safety Inspections**

Service inspections are generally visual by nature, though in some instances (e.g. drainage CCTV surveys) this is supplemented by other information.

Service Inspection frequencies will be monitored and reviewed on a continuous basis to ensure their effectiveness. Following the first full coverage of the network by all activities, which will be completed within 2 years of commencement of the contract, a review will be undertaken to establish:

- o Activities (by network type) which may warrant either (a) a higher frequency of inspection due to evidence of rapid deterioration, or (b) a lower frequency of inspection due to evidence of long life expectancy/low levels of deterioration
- o Locations (specific Road Section Lengths) where the next inspection (for a given activity) should be scheduled earlier than the default due to a specifically identified problem.

Colas follow the RMMS recommendations for the production of Audits. The audit reports will be presented at a frequency agreed with PCC, and any corrective actions arising are raised and dealt with at regular progress meetings between Colas and PCC.

#### **3.3.2. Inspections**

Targets are an important part of the Highway Management Contract. The setting of effective and realistic targets is an important part of contract monitoring to ensure the outcomes required by the contract are being delivered.

There are a hierarchy of targets within the contract:

- **Targets for key outcome indicators** including targets for key mandatory indicators and others that directly measure the achievement of shared priorities.
- **Targets for intermediate outcomes** which represent proxies or milestones towards key outcome targets and including targets for the relevant mandatory indicators.
- **Targets for contributory output** indicators which measure the delivery of schemes, policies or initiatives that contribute to the achievement of targets as described above.
- **Targets for any other outcome or output indicators** including indicators that measure the achievement of local priorities only.

### 3.3.3. Performance Target

#### 3.3.3.1 Best Value Performance Indicators (BVPs) and Mandatory Indicators

Local Authorities are required by government to produce certain Best Value Performance Indicators, including several related to Highways.

Table 3.3 details the BVPs that are measured/reported:

BVPI	Definition	Actual 04/05	Target 05/06	Target 06/07
100	Number of days of temporary traffic controls or road closure	0.074	<0.25	<0.25
165	Percentage of pedestrian crossings with facilities for disabled people	90%	93%	95%
178	Percentage of the category 1,1a and 2 footway network where structural maintenance should be considered	12.73%	12.70%	12.70%
215a	Average number of days taken to repair a street lighting fault – LA Control	<b>New indicator First report due 01/04/06</b>	<b>No target set</b>	<b>TBA</b>
215b	Average number of days taken to repair a street lighting fault- DNO control	<b>New indicator First report due 01/04/06</b>	<b>No target set</b>	<b>TBA</b>
223	Percentage of principal road network where structural maintenance should be considered.	<b>New indicator First report due 01/04/06</b>	<b>No target set</b>	<b>TBA</b>
224a	Percentage of non-principal classified road network where structural maintenance should be considered	<b>New indicator First report due 01/04/06</b>	<b>No target set</b>	<b>TBA</b>
224b	Percentage of unclassified road network where structural maintenance should be considered	<b>New indicator First report due 01/04/06</b>	<b>No target set</b>	<b>TBA</b>
199a	The proportion of relevant land and highways having combined deposits of litter and detritus that fall below and acceptable level.	<b>9% Was also 9% at half year.</b>	<b>8%</b>	<b>7%</b>
199b	The proportion of relevant land and highways from which unacceptable levels of graffiti are visible	<b>New indicator Was 5% at half year.</b>	<b>No target set</b>	<b>TBA</b>
199c	The proportion of relevant land and highways from which unacceptable levels of fly-posting are visible	<b>New indicator Was 0% at half year.</b>	<b>No target set</b>	<b>TBA</b>
199d	The year-on-year reduction in total number of incidents and increase in total number of enforcement actions taken to deal with fly-tipping.	<b>New indicator First report due 01/04/06</b>	<b>No target set</b>	<b>TBA</b>

Table 3.3 BVPs and Targets

The two key aspects that drive delivery under the PFI contract are the output specification and payment mechanism. Payment is made to Colas based on a measured and auditable output. Accordingly, PCC has put considerable time and effort in developing a consistent and reproducible mechanism that linked the condition of the network to payment. The foundation of this is the Network Condition Index (NCI) and Footway Condition Index (FCI).

### 3.3.3.2 Network Condition Index (NCI)

As previously described, the NCI is a measure of the condition of the principal, secondary and tertiary road networks based on the following:

- Skid Resistance as measured by SCRIM.
- Surface Condition as measured by Coarse Visual (CVI) or Detailed Visual (DVI) condition surveys.
- Pavement Structural Condition as measured by deflectograph.

The NCI for the principal and secondary networks is derived from all three of these measures, whilst for the tertiary network the NCI is based solely upon the surface condition index.

PCC has set Colas the target of returning the highway network to a fair to good condition. The following targets apply:

Principal Network	NCI Value of 18.6 or greater.
Secondary Network	NCI Value of 9.9 or greater.
Tertiary Network	NCI Value of 3.02 or greater.

It is considered by PCC that the NCI measurement process gives a far more robust measurement of the condition of the Network than other measures such as the appropriate BVPIs. The Portsmouth NCI is a consistent and reproducible measurement tool which over the life of the contract will demonstrate that the highway asset is being effectively maintained.

### 3.3.3.3 Footway Condition Index (FCI)

The target for FCI at the end of the Core Investment period for each of the footways and cycleways within the principal, secondary and tertiary networks will have an individual Footway Condition Index at or above the FCI threshold of 4.8.

It is the Council's intention to monitor BVPIs in parallel with the NCIs/FCI. It is acknowledged that trajectories for the two types of indicator should be consistent. However, this may not be the case in practice due to inconsistencies in data capture. Furthermore after the first five years of the contract, when the carriageways and footways have been brought up to a fair to good condition, it is anticipated that improvements in the appropriate BVPIs and NCIs/FCI will plateau, with no significant variation. The network condition required by the contract will then have been reached with the main maintenance focus then being life-cycle replacement.

### 3.3.3.4 Key Performance Indicators.

Alongside the key outcome indicators identified above, a number of key performance indicators are being developed which relate to intermediate outcomes. These indicators relate to the following areas of the contract:

KPI 1	Use of Recycled Materials
KPI 2	Street Cleansing Performance
KPI 3	Third Party Claims
KPI 4	Management of Statutory Undertakers
KPI 5	User Satisfaction
KPI 6	Street Lighting

It is anticipated that this list will be expanded to encompass an indicator relating to bridges.

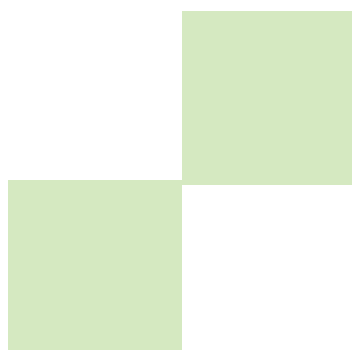
### 3.3.3.5 Local Performance Indicators.

A number of local performance indicators have been developed which are used to provide contributory output indicators for contract management purposes.

These include:

- Percentage of street lights in light.
- Number of HGV's entering the City
- Number of customer enquiries received monthly
- Number of customer enquiries resolved within required timescales

Additional LPI's will be developed as changing performance criteria are identified, including any arising from changes in the Code of Practice for Maintenance Management (which has been revised in 2005).



## 4. Planning and Options

### 4.1 Performance Gaps

The Highway Management PFI contract puts Portsmouth City Council in a unique position in respect of the performance of the various asset components and services associated with the highway network. The "Service Requirements" to be achieved by Colas for the PFI contract are set out in Schedule 4 (see Appendix C). The contract is 'self-monitoring' in respect of its performance, and financial penalties imposed (by way of Service Points) if, for any reason, Colas fails to properly perform the Service.

It has already been indicated that, over time, the standards may need to be varied as customer aspirations change. This will be continually monitored and, if necessary, dealt with under the contract "Change Management" process.

In order to ensure that the contract performance is always kept technically 'up to date', it is a requirement that Colas always accords with good industry practice (as defined – in essence the level of service expected from a skilled operator in this area) and with highway standards (a list which includes manuals and the highways Code of Practice published by the DfT).

In implementing the HAMP, it is also recognised that within the performance of the various asset components and services, directly provided by PCC, there may be gaps between the current performance and the level of performance that is desired. There are two categories of performance gaps:

1. Where the condition of an asset or an asset component is below that desired.
2. Where the level of service provided to the users of the highway network is below that desired.

The desired state for the 'non-PFI' assets will be explored as part of the TAMP development, and any gaps addressed as part of that process.

### 4.2 Options and Priorities

Asset Management requires a move towards long-term, life-cycle investment planning; specifically looking at future investment need, rather than focusing on relatively short-term budget allocation. This long-term approach is likely to lead to better value for money and lower whole life costs by ensuring that investment in the asset is made at the optimum time. For this approach to be effective, it is necessary to develop appropriate processes for setting priorities and identifying options. This concept is embraced by the PFI contract.



#### 4.2.1. Priority Setting

During the Core Investment Period (CIP), Colas's Core Investment Works (CIW) Team will be preparing 'costed' CIP rolling programmes for investment, based on the Network Condition Index (NCI) and Footway Condition Index (FCI) for each UKPMS section, and on a register of streets identified as requiring work, compiled as a result of observations recorded during routine inspections. As part of the process, preliminary site visits are then made to assess the possible extent of works required by each scheme, assisting with the preparation of the three-monthly programmes. PCC are also able to comment on the proposed programme. In addition to considering the NCI and FCI, the programmes also take into account the distribution of schemes throughout Portsmouth and the need to coordinate Core Investment Works with street lighting, structures, improvement and maintenance schemes.

#### 4.2.2. Option Identification

Once a three-monthly programme has been compiled, a member of the CIW Team visits the site to take photographs and make preliminary notes. These are then used to prepare a design brief for the scheme, following a standard format. The brief sets out relevant information about the site and includes photographs to show general views of the street and the defects noted during the site visit. Other information may also be included where useful and available, such as core logs, SCRIM data, or the extent of a conservation area. The CIW Team consider any site restrictions, including any unavoidable restrictions such as the requirement to maintain unrestricted traffic flow or a certain traffic capacity at particular times, the inability to close a road, or night-working. They also consider whether any special materials will be required for the scheme; for example, coloured surface treatments, block paving to an area of carriageway or conservation kerbs. Having identified any relevant restrictions or special requirements, the CIW Team are able to add all the appropriate treatment options to the design brief, also taking into account the routine maintenance implications of the treatments, predicted life of treatments and estimated costs. Any issues regarding the design briefs can be raised at the weekly CIW Team meetings prior to the selection of the preferred option. The CIW Team may also undertake Whole Life Costing on the options, considering the suitability of the proposed treatments in terms of reaching the required NCI values. The CIW Team are then able to review the options in the design brief to reflect practical and programming issues as well, a preferred option is selected and the brief is issued to the CIW design consultants. Once a design has been prepared, it is issued to PCC for their comments and any subsequent amendments can be made if necessary.

### 4.2.3. Value Management

The concept of Value Management has been addressed by the development of the 'Scheme Preparation Process' in Colas's Operations Manual, as a way to document the steps taken to identify and select treatment options (along with the Operations Manual procedure for the CIP Rolling Programme, for identifying and selecting schemes). Some stages of this process have been described in the sections on priority setting and option identification and the flow chart given in the Operations Manual is reproduced below and illustrates the process in its entirety. In this chart, the stages in the process are shown in blue boxes, with the inputs and outputs to their left in green boxes.



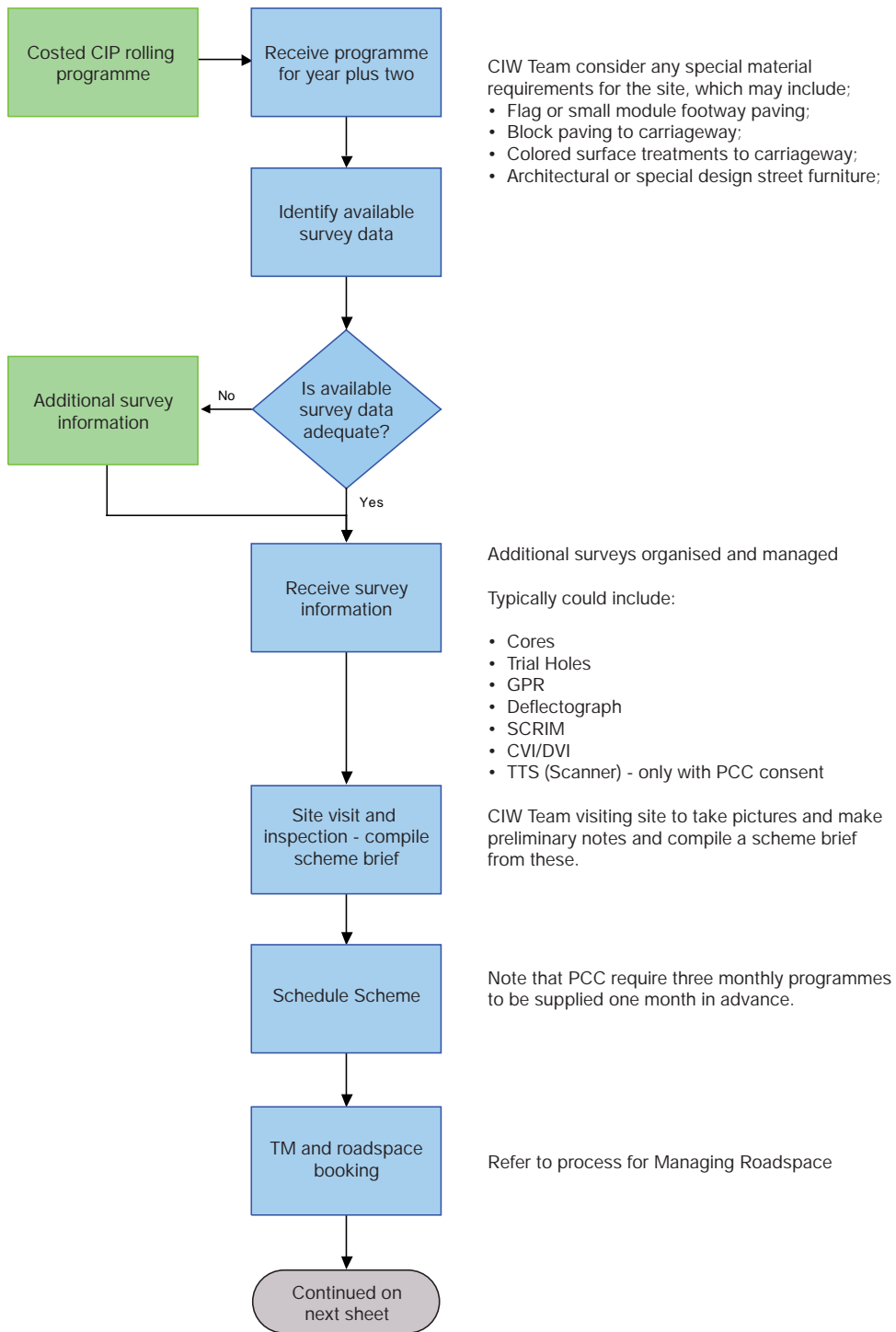


Figure 4.1a Scheme Preparation Process

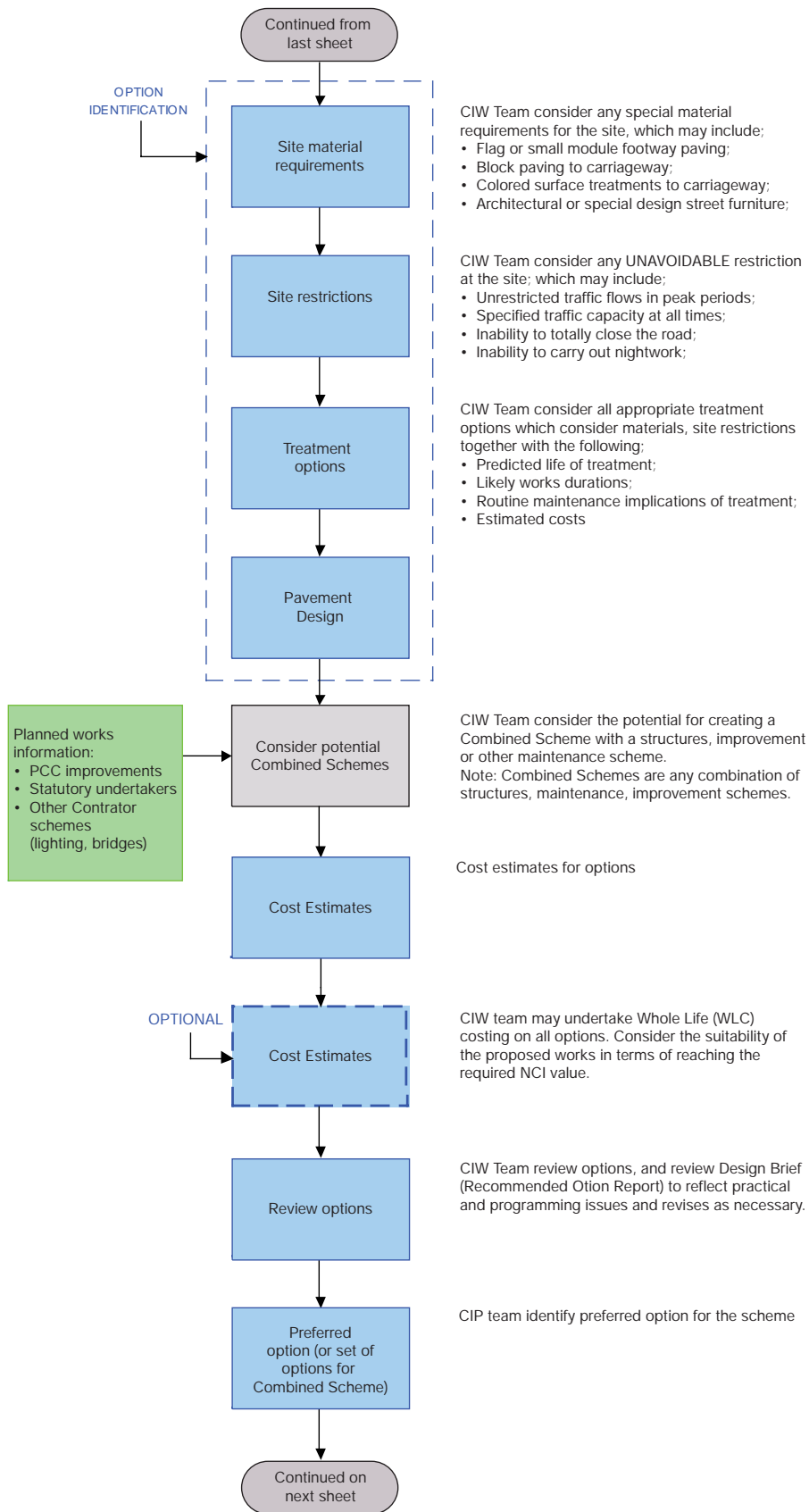


Figure 4.1b Scheme Preparation Process

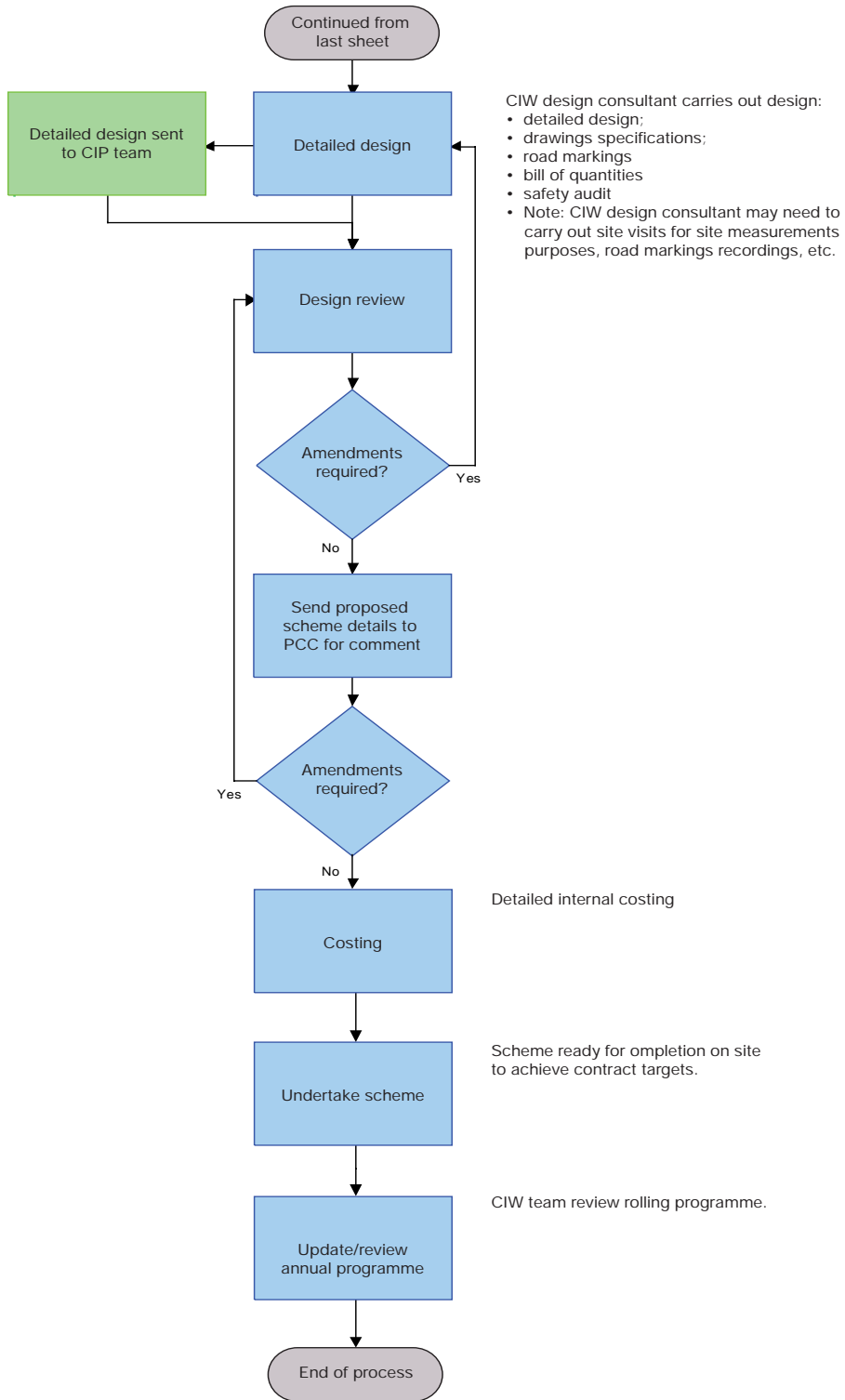


Figure 4.1c Scheme Preparation Process

### 4.3 An Introduction to Lifecycle and Investment Planning

The current maintenance practices carried out by Colas as part of the Highways Management Contract, to a large extent can be described as 'managing the lifecycle' of each asset component. However, in common with most other Local Authorities, the contract has been developed largely without cross-reference between the different asset groups. Whilst the contract accords to asset management principles in setting target service levels, and taking a longer term view, the aspirations after the initial 'core investment period' will be to develop a more integrated view in respect of the various asset components.

The general concept of Lifecycle Planning (recognised as part of the contract) is that there are key stages in the life cycle of each asset component and options at each of these stages for the investment required. One objective is to ensure that each part of the asset achieves its full-expected life, at minimum cost. The analysis of options using this criterion is what is generally known as 'Life Cycle Costing' or 'Whole Life Costing', and many models for this exist in the Engineering industry – including in the Highways sector. These concepts are being used, and will be developed by Colas during the life of the contract.

The generic asset life cycle, that can be said to apply to all aspects of the Highway, is illustrated in the figure 4.2 below;

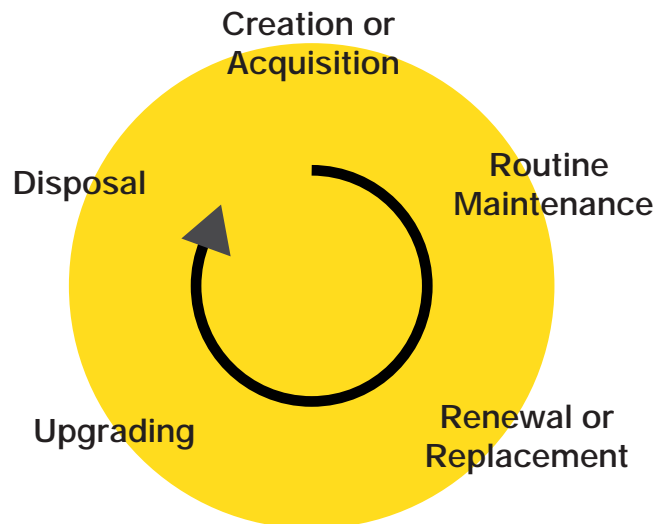


Figure 4.2 Generic Asset Lifecycle

Generally, as identified in the CSS Framework (2004), these key stages involve the following interventions by the asset managers;

Creation or Acquisition	Build or purchase a new asset in response to one of three demands; <ul style="list-style-type: none"> <li>- New Development or Major Upgrading (see below)</li> <li>- Capacity (new demands on the service) and</li> <li>- Performance (to meet level of service targets)</li> </ul>
Routine Maintenance	Carry out routine maintenance to maintain the asset in a serviceable condition. The definition of such performance standards is dealt with elsewhere in the HAMP but in the lifecycle management plan, the implications for each aspect of the asset and on the different road hierarchies will be explained. In many instances routine maintenance regimes are principally based on historical practices rather than identified needs. Asset management demands the explicit identification of need.
Renewal or Replacement	Carry out work to return the asset to its "as new" capacity and condition. Renew or replace the whole asset, or elements of it, when routine maintenance alone cannot sustain the asset.
Upgrading	Improve the asset, or part of it, above its original standard to meet future needs (a special case of 'Creation')
Disposal	Decommission or demolish obsolete assets. In the case of Highways, roads themselves are rarely fully decommissioned, however individual asset components are constantly being decommissioned, and may or may not be replaced depending on current demand.

*Table 4.1 Key Lifecycle Stages*

In this Asset Management Plan, and through the PFI contract, PCC has set out its approach to each of these stages in the lifecycle of each of a series of key asset groups. Where current practice delivers a rational approach to the lifecycle maintenance requirements, there will be no need to change. However, it is recognised that in some areas of activity, change may be inevitable. Any required changes will be identified during the gap analysis stage of the asset management process, and will form part of the Improvement Actions (see section 7.2).

In each of the following Lifecycle Management Plans, the specialist needs of that part of the asset, and the way that the level of service can be achieved is set out. Specialists responsible for the relevant group of assets have produced this, as part of the contract development. However, it is recognised that, in future, there will need to be much greater 'joined up thinking' between disciplines when planning lifecycle maintenance activities. In each Plan, it is acknowledged that there is almost never a single solution to achieving the desired objective. Therefore the evaluation of lifecycle costs will be a major consideration for Colas in deciding which option is the best in each set of circumstances to deliver 'minimum whole life cost' solutions.

In addition, the definition of desired service levels will consider several criteria, based not solely on engineering but also social and environmental factors (see chapter 3), and will often cut across more than one asset group.

The life-cycle plans expand on the contract arrangements, and give a brief description of the general scope, inventory statistics, inspection and maintenance regime (the option appraisal and investment prioritisation process for each asset component), and cover the whole life-cycle:

1. Creation of the asset
2. Maintenance of the asset to maintain serviceability
3. Renewal of the asset to bring it back to "as-new" condition and to restore its value
4. Improvement of the asset to bring about improved performance
5. Disposal of the asset

Before starting on a Lifecycle Management Plan, it is essential to understand what assets are currently owned or in the care of PCC. The knowledge of the asset inventory is an area of improvement required within the contract.

#### **4.3.1. General Approach to Value Management as part of Lifecycle Planning**

In section 4.2 of this Plan the part of the overall asset management process concerned with option identification and evaluation is described, and the concept introduced of 'Value Management' (VM). First developed by the Highways Agency in connection with large Motorway and Trunk Road schemes, VM is now being recommended as good practice for local authorities through the Code of Practice for Maintenance Management (2005 edition) and is an integral part of the PFI contract. Value Management is a step in the design process for maintenance schemes that identifies feasible options, identifies the benefits of each based on objective criteria, and facilitates the selection of the best value solution in each case.

Generally, it is the policy of Colas when designing scheme options, to seek to;

- Combine scheme options in different disciplines at the same location wherever possible

This approach is likely to save traffic management costs, and minimise disruption to the travelling public. In the longer term, it should be possible to place an economic value on some of these parameters, thus enabling an objective total whole life cost to be calculated for each scheme option, whether singular or hybrid.

- Extend scope of scheme options to include preventative maintenance where possible  
Colas currently adopts the approach of examining the potential to extend the scope or scale of a scheme option at the design stage, as it may be more cost effective to carry out other preventative maintenance to other asset components at the same time. In addition, this would save traffic management costs, and minimise disruption to the travelling public in a similar way as a hybrid scheme.
- Design for future ease of maintenance and minimisation of costs

In order to minimise whole life-cycle costs, a true evaluation of routine and cyclic maintenance costs should be evaluated at the scheme option stage. However, at present, this is not always the case.



## 4.4 Handback

To ensure that the highways asset remains in a steady condition, the contract specifies the condition at the end of the contract period for each element of the project network.

Five years before the end of the contract, PCC and Colas will carry out a joint inspection. A programme of maintenance will be agreed including renewal, reconstruction, repair or reinstatement required, to be carried out in order to procure that the project facilities will, on the expiry date, satisfy the Handback requirements.

Another joint inspection will be performed two years before the end of the contract, to check the progress of the renewal programme, and to update it if necessary.

No later than one month after the expiry date, a final inspection will determine if the handback requirements are fulfilled: a handback certificate will be issued.

A performance guarantee will be provided to ensure that the renewal programme is carried out, and financed. The guarantee will be released after the issue of the handback certificate.

## 4.5 Lifecycle Management Plans

### 4.5.1. Road Carriageways

#### 4.5.1.1 Principal and Secondary Network

The contract provides an incentive to develop a consistent and sustainable maintenance regime, which ensures that the highways asset is maintained to an optimum technical level.

The initial 5-year Core Investment Period is dedicated to up-grade the Network to the standard specified by the City Council. Once this is achieved, there is an obligation to maintain this level throughout the rest of contract. The Payment Mechanism provides incentives through financial penalties in case of underperformance. The performance in that respect is monitored on a yearly basis by assessing the condition of the Network through a series of machine and visual surveys, which are combined to derive the Network Condition Index NCI.



The initial programme and the forecasted renewal programmes have been developed using a whole life costing approach, with a two folded approach:

- Minimise the overall cost of rehabilitation and maintenance, in order to contribute to the affordability of the specified requirements.
- Minimise the lane occupancy, to minimise the traffic management costs and the disruption to the public.

Given the complexity of the requirements for upgrading the network, Colas have employed an Operational Research Consultancy to develop a software package to determine the optimum strategy taking in to account such factors as future renewal costs, the life expectancy of various treatments, the minimisation of traffic management and the residual life required at handback. The software, called "Hummock", has modelled each road on the network in order to simulate the deterioration year by year to determine the optimum time to repair and upgrade each road. From the data inputted, "Hummock" has produced a detailed programme for every road on the network based on its current state, the traffic and its construction.

Proprietary treatments with long life expectancy using high specification binders and aggregates have been incorporated into the design in order to minimise the lane closures over the life of the contract.

For the 20-year period after the initial rehabilitation, a 5-year rolling programme of capital cost schemes is prepared, based on the condition of the Network, as assessed by the NCI.

These schemes are developed:

- to maintain the overall condition of the network
- to address those roads or sections of road which are sub-standard and/or becomes too onerous and to disruptive to maintain under the routine maintenance regime.

This mechanism is triggered by the Payment Mechanism, which provides the incentive in specifying the minimum permitted condition levels. It is to be noted that irrespective of any consideration of budget any drop in the overall condition under the target or any sub-standard sections will have to be addressed, or payment deductions will occur.

A data repository will provide additional information in the build-up of the rolling programme. This will have regard to the condition of the roads and to the capability to monitor and visualise through the GIS the frequencies and extents of the routine maintenance interventions, as derived from the cyclic safety inspections.

To ensure the sustainability of the maintenance regime, the capital cost maintenance programme is financed under the Private Finance principles, through a specific fund held by Ensign and monitored by the Banks. It is constituted and amended on a yearly basis, such as to cover 100% of the following year costs and a significant part of the next 4 years.

All the capital cost schemes are and will be logged in the repository, where the nature and the date of completion will be entered. This enables Colas to cross analyse the results of the yearly assessment and the expected improvements of the programmed works.

#### 4.5.1.2 Tertiary Network

Due to the nature of this network, which does not play the same role as the main roads and where traffic has not got the same impact on the condition of roads, Colas are not required to maintain the level of the asset after reaching the required NCI by the end of the Core Investment Period. The Council considers that the condition of footways should take a higher priority on the tertiary network.



However, the Contract does provide a fund to finance a minimum capital cost maintenance programme. Colas will assist in this process. The network will be assessed every year and sub-standard sections highlighted to the City Council, which will decide on the allocation of the available funds on a priority basis.

#### 4.5.2. Footways and Cycle Tracks

The principles are the same as for the carriageways. The condition of the footways is assessed by the Footway Condition Index FCI, derived from visual surveys carried out under the UKPMS standards.



As opposed to the NCI, there is no target at Network level, but a target at section level and this also applies for the footways in the Tertiary Network.

Depending on the footway condition, schemes will be included in the 5-year rolling plan for capital cost maintenance.

Colas will seek to renew inappropriate surfacings with materials designed for long-life, ease of maintenance and environmental qualities appropriate to their location. Schemes will be combined with works on kerbs, street lighting and also, where appropriate, carriageways, in order to minimise disruption to the public.

#### 4.5.3. Lighting

Colas's strategy for the rehabilitation of the street lighting network is based on the past experience of the maintenance of Portsmouth Street Lighting Network, and the following approach:

- Minimise the requirement for intervention after the core investment period.
- Use a family of lanterns and columns to give uniformity wherever possible.
- Continue to look for innovative solutions to minimise whole life costs.
- Seek to deliver energy efficient solutions.

Colas has used the same modelling concepts as employed in the pavement programme, in order to achieve the optimum strategy in terms of investment cost, operational cost and the environmental cost of improving the quality of street lighting.

Due to the choice of long life expectancy components, it is expected that only routine maintenance will be carried out in the 20-year period after the initial upgrade of the Network.

Elements of the street lighting network have been renewed immediately prior to the commencement of the contract. They are designated "Deemed to comply", and accordingly do not require intervention apart from routine maintenance during the Core Investment Period. Following this period, deemed to comply areas will be included in the 5-year rolling plan according to their condition. No major works are expected before year 10 after the Commencement date.

Colas are aware of pending advances in lighting technologies and will work with suppliers to keep the project network at the forefront of innovation and best value. Examples of innovation are solar power, LED light sources, dimming and remote monitoring. Whilst some of these initiatives are not yet economically viable, Colas believe that they will become viable during the currency of the contract and will be self-financing. Colas will ensure that as soon as new technologies become economically feasible, that they are introduced to the project network.

All the information regarding the inventory and the maintenance regime are logged in the Street Lighting module of the Exor database.

#### **4.5.4. Bridges and Structures**

##### **4.5.4.1 General Scope**

The asset grouping comprises bridges (both vehicular and pedestrian), culverts, subways, high mast lighting and retaining walls.

Within Portsmouth City Council's boundaries there are a number of structures that carry the highway infrastructure which are owned by other statutory bodies such as, Network Rail, and Environment Agency.



#### 4.5.4.2 Inventory Statistics

The extent of the inventory is indicated in the following table by location and type of construction:

Location	Masonry Arch	Brick Arch	Steel Jack Arch	Steel	Reinforced Concrete	Prestressed Concrete	Timber	Comments
George Flyover Bridge						✓		
Northern Road Bridge					✓			
Eastern Road Bridge				✓				
Burfields Road Bridge					✓			
Copnor Road Bridge								Not included in PFI Contract
Norway Road Bridge						✓		
Tipner Lake Bridge								Restricted Colas maintenance liability
Pounds Access Bridge						✓		
Tipner North Int Bridge						✓		
Tipner South Int Bridge						✓		
Holbrook Road Bridge						✓		
Walton Road Bridge						✓		
Rudmore Flyover Bridge				✓				
Copsey Path Underpass					✓			
IBM Underpass					✓			
Herbert Street Underpass					✓			
Ports Creek Footbridge				✓				
Alec Rose Lane Footbridge					✓			
Locksway Road Footbridge				✓				
Northern Road Footbridge				✓				
London Road Footbridge 1					✓			
London Road Footbridge 2				✓				
Racecourse Lane Footbridge		✓						
Spur Redoubt Footbridge							✓	
St Mary's Road Footbridge				✓				

Location	Masonry Arch	Brick Arch	Steel Jack Arch	Steel	Reinforced Concrete	Prestressed Concrete	Timber	Comments
Southampton Road Subway 1					✓			
Southampton Road Subway 2					✓			
Queen Street Subway					✓			
King Richard 1 St Subway 1					✓			
King Richard 1 St Subway 2					✓			
W.Churchill Ave Subway 1					✓			
I.Brunel Road Subway 1					✓			
I.Brunel Road Subway 2					✓			
Western Road Subway					✓			
Tipner Lane Subway					✓			
Whale Island Way Subway					✓			
Twyford Ave Subway					✓			
Stamshaw Road Subway					✓			
Kingston Crescent Subway					✓			
Rudmore Road Subway					✓			
Cosham Interchange Subway					✓			
Somers Road Subway					✓			
Lord Montgomery Way Subway					✓			
W. Churchill Ave Subway 2					✓			
Cornmill St Subway					✓			
Bradford Junc N Subway					✓			
Bradford Junc Subway					✓			
Rudmore Services Subway					✓			
Unicorn Road Subway					✓			
Stamshaw Beach R/Wall					✓			
Rudmore NW R/Wall								Reinforced Earth
Rudmore NE R/Wall								Reinforced Earth
Rudmore SW R/Wall					✓			
Stanhope Road R/Wall					✓			

Location	Masonry Arch	Brick Arch	Steel Jack Arch	Steel	Reinforced Concrete	Prestressed Concrete	Timber	Comments
Leominster Road R/Wall								Brick
Dell Close R/Wall								Brick
Canoe Lake R/Wall								Brick
Shirley Avenue R/Wall								Brick
Whale Island Boat Access				✓				
High Mast Portsdown 1				✓				
High Mast Portsdown 2				✓				
Cross Street Petit Jean				✓				
Cornmill St Petit Jean				✓				
Rudmore Road Freight entrance Petit Jean				✓				
Rudmore Road Freight exit Petit Jean				✓				
Commercial Road N Petit Jean				✓				
Southampton Road Petit Jean				✓				
<b>Totals:</b>		<b>1</b>		<b>13</b>	<b>35</b>	<b>10</b>	<b>1</b>	<b>8</b>

*Table 4.2 Structure & Bridges Inventory*

Many bridges will have elements of brick column steel or concrete within their structure therefore the figures contained are based on the major component and should be used only for indicative purposes.

The following table shows the extent of the inventory by type and ownership:

Owner	Bridge	Footbridge	Culvert	Subway	Retaining Wall	Other	Totals
Portsmouth City Council	14	11	0	35	9	10	79
Network Rail	13	7	2	2	0	0	24
DfT	16	2	0	6	0	16	40
MOD	1	0	0	0	0	0	1
Other	0	0	0	0	1	3	4
<b>Totals:</b>	<b>44</b>	<b>20</b>	<b>2</b>	<b>43</b>	<b>10</b>	<b>29</b>	<b>148</b>

*Table 4.3 Inventory Type & Ownership*

#### 4.5.4.3 Inspections and Assessments

The EXOR Structures Manager system is used as the formalised inspection system for structures, with inspections carried out in accordance with the provisions stated in the Design Manual for Roads and Bridges.

##### *General Inspection (GI)*

A 2-yearly superficial, visual examination of all structural elements is programmed, recording and describing all areas of significant defects. Structural elements include foundations, supporting earthworks, retaining walls and other parts affecting the stability of the structure. The output consists of a completed record form and photographs where applicable.



##### *Principal Inspection (PI)*

A 6-yearly close, tactile examination of all inspectable elements is carried out, recording, describing and measuring all areas of significant defects. A dimensional check is carried out to verify details shown on existing drawings (if available) or to compare with the previous report of the last inspection. Special arrangements for access, safety, risk and traffic management etc. are obtained as necessary. The output consists of a comprehensive report including a completed record form, photographs, results of special material testing (if needed), conclusions and recommendations.

##### *Special Inspection (SI)*

A close examination of a particular area of concern is carried out as required, with specialist input sought where appropriate.

##### *Assessments*

Structural/load capacity assessments are carried out in accordance with the appropriate Departmental Standard if, as a result of any inspection, the load carrying capacity of a structure is in question. Likewise, structures are assessed following any changes in legislation, regulations and/or physical signs of distress or failure.



### *Development of Inspection Programme*

Colas review the last PI for each structure and produce a programme of PIs to inspect 1/6th of the bridge/structure stock every year, broadly in line with the previous dates of the last PIs for each bridge. Within the first two years of the Contract, every structure will be the subject of a GI, and within the first 6 years, every structure will have been the subject of a PI. The scheduling of these first inspections will take into account the Core Investment Programme investment works and will establish a regular inspection pattern that can be developed for each subsequent year's inspections. The condition of a structure reported in the last PI will determine whether it needs to be inspected earlier or can be inspected later. For structures not having had a PI in the first 2 years, half will receive a general inspection in year 1 and half in year 2. GIs will follow the pattern of the PIs. The inspection programme may be adjusted to accommodate structures that are within a section of road Core Investment Work (CIW). Opportunities for testing will be taken where possible. Each bridge /structure that is itself to be the subject of CIW will be inspected as part of the process of finalising the CIW specification.

#### **4.5.4.4 Maintenance Regime**

The maintenance history of structures is recorded in the Bridge Maintenance Manual. Individual maintenance manuals are prepared for each structure, except for minor structures of similar design, such as some culverts, where a group maintenance manual can be prepared instead.

Underwater inspections, where appropriate, of all existing Structures will be carried out within two years of the commencement of the Contract Period and the results input into the Bridge Maintenance Manual.

Through the maintenance manual records and with the use of the appropriate forms, dates of inspections and details of identified repairs /remedial works will be recorded. The forms identify cost estimates for each type of repair, hence where it appears that a repair may be classed as a Major Structural Repair under the terms of the Agreement, the extent of repair work and its cost estimate will be independently checked and PCC will be notified accordingly. Major Structural repairs were excluded from the contract for affordability reasons. There are defined as non-routine maintenance having a cost in excess of £100,000 indexed. The Council will seek funding for any major structural repairs through the Local Transport Plan process.

Colas have a duty to provide PCC with advance notice if the potential future need for a Major Structural Repair is identified. In the event that a Major Structural Repair is necessary, Colas cease to provide the service to that structure and any parts of the network which are directly affected, with the exception of routine and winter maintenance of the structure, carriageway, footway, street lighting, other lighting and the required insurances, from the date that PCC are notified that a Major Structural Repair is required. PCC then become responsible for the structural maintenance, structural safety, associated signage and traffic management. PCC and Colas discuss and agree any interim measures to be taken, with Colas ensuring public safety is maintained (and where possible/feasible, the safety of the structure) until PCC are able to make arrangements to take responsibility for the structure. PCC may later hand back a structure to Colas on completion of the Major Structural Repair.

Tipner Lake Bridge and Copnor Road Bridge were identified as in need of Major Structural Repair at the time of the Agreement between PCC and Colas and were therefore recorded as such from that date.

#### **4.5.5. Other Highway Assets (incl. Environment, Drainage, Street Furniture, and 3rd Party Items.)**

As with most Local Authorities there are other assets that under its control that whilst being public highway are not adopted. Within the City these include land managed by Leisure and Housing and cover elements of all highway assets. Regrettably this split in responsibilities results in differing standards of maintenance and inconsistencies in actual and perceived maintenance standards.

The Council is now seeking to achieve common standards of maintenance for all public accessible land under its control. This may be delivered through expansion of the Highway Management contract.

#### **4.6 Approach to Works Programming**

The highway works carried out on site are two folded:

- works of a capital nature, programmed to rehabilitate and maintain the condition of the network
- works of a cyclic or reactive nature, in order to prevent the degradation of the asset or fix any defects;

An initial 5-year programme has been produced for the Core Investment Period, to bring the Network from the level at the commencement to the required target. The rest of the contract after the Core Investment Period will be covered by 5-year rolling programmes, devised to maintain the required level throughout the duration of the contract.

Those programmes are mainly based on technical assessments, where sections of roads are selected and treatments determined in order to restore the NCI, and on a more general consideration to deliver a fair spread of schemes across the City in order to prevent excessive disruption and share the benefits of the rehabilitation programme. From the 5-year programme are derived 12-month programmes, which are more detailed, and then quarterly programmes, which are operational programmes. In the elaboration of these programmes are taken on board other constraints, such as other works programmes from the statutory undertakers or from the City, special events.

The routine maintenance works are derived from the programmed cyclic maintenance and the corrective maintenance, as a response to the identified defects, coming from the inspection regime or from enquiries or complaints from members of the public. Weekly programmes are issued, regrouping these works of a lesser scale and the core investment or life cycle works, such as to give an overview of the roads affected by the operations.

The information is made available to the City Help Desk. Colas operate with the Exor Street Works module as the road space booking system. The programmed works are logged in the database as well as works from other undertakers.

In the overall programming process, different levels of coordination occur. There is an internal coordination between the street lighting, the civils, and the maintenance departments, in order to respect the logical sequence of operations, to reduce the overall disruption by minimising lane occupancies and by maximising works under the same closure.

A second level of coordination is operated with the City Council services, in order to explore adding value by combining Colas and PCC schemes.

A third level is with the other statutory undertakers. The indicative and operational programmes are issued and discussed at periodically HAUC meetings. The stakeholders are encouraged to co-ordinate their works more efficiently for both the short-term minimisation of disruption, and the longer-term maintenance of the asset, by implementing all relevant practices that are in particular, mentioned in the Code of Practice for Co-ordination.

It is anticipated that the implementation of the Traffic Management Act 2004, will bring changes to the current procedures, and will bring benefits to co-ordinating works and closures, minimising the impacts on particular streets to all highway users. In that respect the role of Traffic Manager is retained within the City.

Colas prepares and submits works programmes on a weekly and annual and 5 –yearly basis as required by the contract.

The 5-yearly programme is intended to provide an indication of works to enable Colas to demonstrate the level of work needed to deliver the required contract outputs, and also for both the Council and Statutory Undertakers to co-ordinate their individual works programmes and to highlight potential areas of conflict.

The annual works programme is a rolling programme prepared by Colas and submitted for approval every six months to the PCC Representative. The programme is based on the information from the safety, detailed and structural inspections, collated through the reporting mechanism.

The weekly works programme includes and details the required information on type of work, location of proposed work, proposed lane occupancy including lengths and hours of work, proposed method of traffic control including length of traffic control, contact details for supervision and notes of likely delays to road users. As required by the terms of the contract any changes to the weekly programme are notified to the PCC Representative on a daily basis.

Colas also produce a rolling 3-monthly programme to assist in communicating forthcoming works with key stakeholders throughout the City. All programmes are widely circulated to allow meaningful consultation to take place.

## 5. Decision Making and Management Processes

### 5.1 The Overall Process

The overall contract PCC decision-making and management structure is detailed in Figure 5.1. This identifies the contractual arrangements existing between the various parties to the contract.

### 5.2 Budgets and Asset Valuation

Financing of the highways management contract is based on a number of assumptions and a clear allocation of risk. The Department for Transport provides approximately 40% of the total contract value through local authority PFI grant and the remaining 60% is met by the City Council. The City Council contribution is based upon allocating all funding provided through the Local Transport Plan and the revenue support grant settlement specifically for highways maintenance.

The City Council accepts the risk that future LTP and revenue support grant funding cannot be guaranteed and that contract inflation may differ from the increase in government contributions.

This effectively means that the highways management budget is “ring-fenced” over the life of the contract.

### 5.3 Organisation Structure, Decision Makers, Skills and Resources

The relationship between the parties to the contract is detailed in Appendix B.

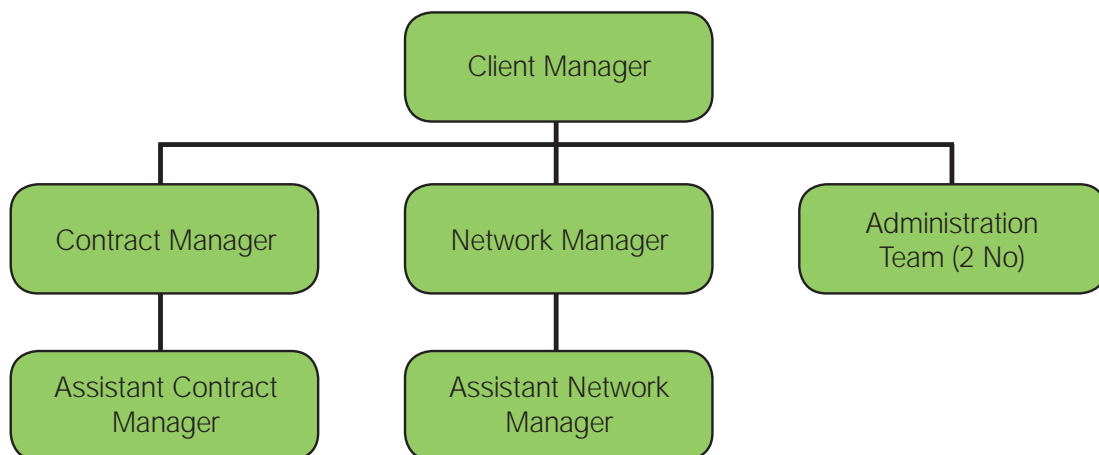


Fig 5.1 City Highways Services Staff Structuring

The retained Portsmouth City Council Management Structure is detailed in Figure 5.1. From a pre-contract complement of 26, this identifies 7 retained posts that manage the contract on a day-to-day basis. These are supplemented on a need basis by specialist staff with expertise in ground maintenance, traffic signals, road safety, enforcement, help desk and cleansing. The contract has required a culture change for staff retained by the Council from service provision to contract auditing and management.

Formal liaison with Colas takes place through monthly operational and progress meetings. The operational meetings deal with day-to-day issues whilst the progress meetings take a more strategic approach and seek to resolve potential disputes. All parties to the contract are represented at these meetings which are supplemented by task specific working groups and day-to-day contact to deal with particular issues. Any member of staff from each organisation, whether directly involved in the contract or not, may bring issues to these meetings.

A Network Board overarches the direct management of the contract. This board meets quarterly and comprises three representatives from Colas and the Council. This board sets the strategic direction for the contract and seeks to be a critical friend. It also considers significant or difficult decisions.

Within the Council a separate contract management group meets monthly to discuss issues and make the required decisions on the potential award of Service Points and to confirm or otherwise Relief Events. Collective responsibility is therefore exercised in the making of these important contract decisions.

Figure 5.2 outlines the Liaison and Disputes procedures included in the contract. In particular this figure details the escalation route for all disputes.

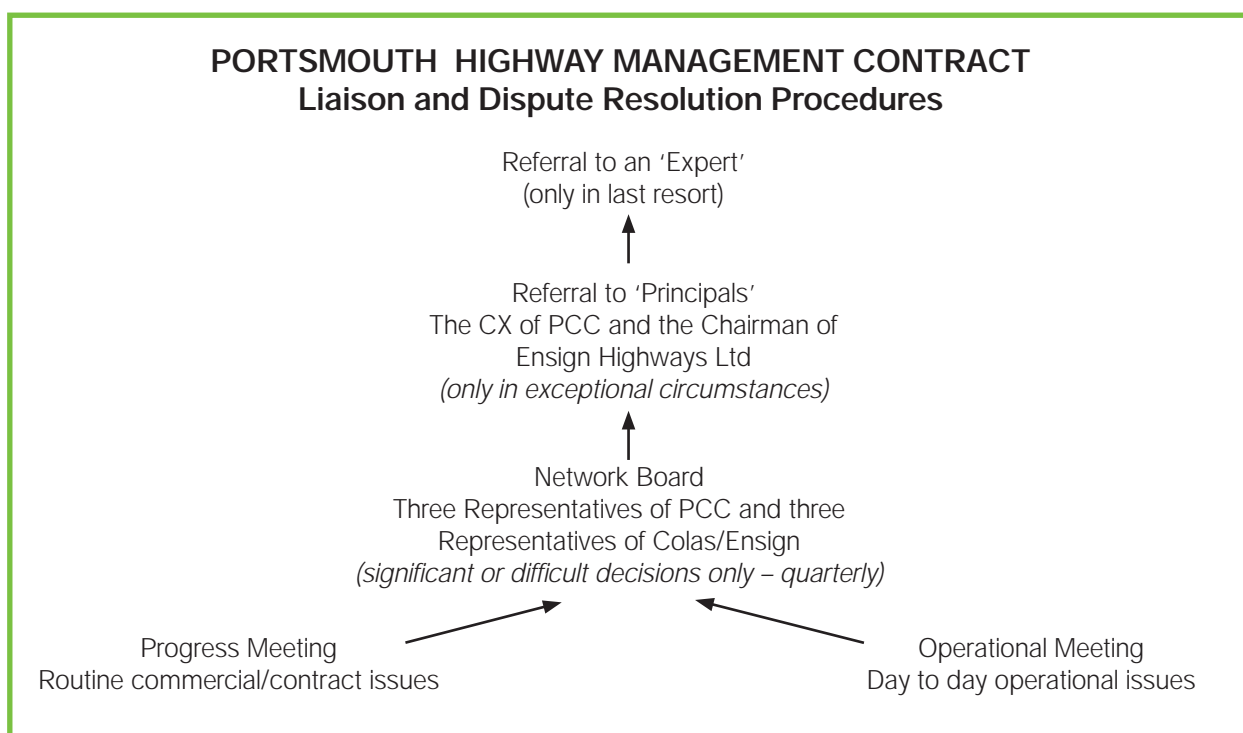


Figure 5.2 Liaison and Dispute Resolution Procedures

## 5.4 Contract Monitoring (PFI)

The Highways Management contract is largely self-enforcing. It was never the intention that contract monitoring should follow the traditional route of inspecting, supervising and measuring all activities undertaken by Colas. Indeed the retained staff structure is too small to permit this.

However this is not to say that Colas has an entirely free hand. The contract is outcome based and the payment mechanism incentivises them to deliver the required service without recourse to an intrusive inspection regime. It is generally a light-touch approach which can be stepped-up as necessary.

At the commencement of the contract Colas elected to use EXOR as a Network and Service management IT tool. Whilst the servers are located at the Colas's offices, City Council staff have open web based access to all areas of the database. Routine and ad-hoc reports are run as necessary by the Council to monitor not only performance but also the quality of that performance.

In parallel with this the contract also requires Colas to produce a full range of annual and monthly reports detailing all aspects of service delivery. These are monitored regularly and are the subject of monthly progress meetings.

All the above contract monitoring is supplemented as necessary by ad-hoc site visits and quality audits by Council staff. Whilst this process is nominally led by the contract management team, there is now a more corporate approach to monitoring with all Council staff being encouraged to report issues and problems.

It is acknowledged by the Council that it no longer has the skills and staff resources to effectively evaluate the technical pavement model that links through to the payment mechanism. Accordingly provision was made in the contract to employ an independent certifier, who audits all calculations relating to pavement and footway condition prepared by Colas. These audited calculations are then verified by PCC prior to input into the payment mechanism.

The lenders, who bring 90% of the private funds necessary to the project in order to rehabilitate the Network, are equally committed to the project and also involved in the Monitoring process. They have appointed a Technical Advisor who is checking the progress of the works, the procedures and the overall performances against the specifications. Colas are reporting to the Bank on a regular basis on the Programme, the quality, the safety and the financial position.

In case of persistent and material underperformance, the Bank's have a step-in right, in order to protect their investment. This is a strong additional incentive for Colas to ensure that the standards defined in the Contract are met.

This scrutiny from another party to the project brings an additional comfort regarding the sustainability of the project.

## 5.5 Incentives and Penalties

The onus for performance monitoring is vested in Colas. The Council has only retained a small number of staff to verify contractor performance but has retained a variety of potential remedies for failure to perform or monitor the contract. Remedies include warning notices, increased monitoring and step in rights.

There are three main elements to the payment mechanism based on availability, performance and usage.

### a) Availability

The concept is based upon the network being available and fit for purpose throughout the contract. If a road is closed or unfit then payment deductions can be made from Colas' charge.

Relief from deductions is offered during programmed works, on certain categories of emergency intervention and some of the actions of third parties e.g. Statutory Undertakers. Nevertheless the regime incentivises Colas to complete works on time and manage third parties.

Payment deductions are weighted to reflect the impact of over running road closure, with higher deductions for busy roads and peak time works.

### b) Performance

The contract contains a detailed Output Specification setting out the standard to be achieved for each element of the service. The emphasis is on delivering the required outcomes rather than on specifying the methodology.

Failure to achieve the standards specified will give rise to payment deductions. The value of the deduction is linked to the cost of rectifying the performance failure. The basic philosophy is that it must be more cost effective to remedy the defect than suffer the deduction. A payment deduction model has been developed which links into the data repository.

It is fundamental to the contract that network condition can be measured with sufficient accuracy for payments to be made to (or withheld from) Colas. A combination of established highway condition surveys have been used to create a network condition index.

### c) Usage

10% of the payment to the contractor is related to network usage by Heavy Goods Vehicles (HGV's). The rationale is that HGV's are proven to cause damage and wear and tear to the carriageways in direct proportion to their numbers.

Payment to the contractor will therefore be linked to the increase or decrease in the numbers of HGV's entering the City. The Council's total liability will be capped and potentially constrained by overall network capacity.

Detailed surveys have been carried out to establish traffic flows into the City and to predict trends.

The contract also acknowledges that payment deductions are not always the most appropriate remedy and that for a number of potential events it is considered that Service Points provide a better incentive.

For example the failure to adequately sign highway works or respond to an emergency situation does not immediately equate to a financial remedy if public safety is at risk. In this instance Service Points would be awarded and if pre-defined thresholds are exceeded the contractor may receive a warning notice. In extreme circumstances the accumulation of Service Points could lead to contract termination and is a powerful motivation for both the contractor and their lender.

The Council currently benefits from competitive energy prices through a national procurement consortia. It is therefore proposed to continue with this arrangement on the basis that the Council will take price risk but the contractor will accept consumption risk based on forecast volumes. There is therefore an incentive for Colas to minimise energy consumption through the installation of energy efficient units.

### **5.5.1. Insurance and Third Party Claims**

A fundamental principle of the contract is that the overall management and stewardship of the highway network and street scene includes responsibility for all third-party accidents and claims, in addition to property and other liability covers. This provides Colas with a significant incentive to manage the network efficiently and to undertake appropriate and timely intervention for proactive and reactive maintenance operations.

Third Party claims against either Portsmouth City Council and/or Colas can be for either personal injury accidents or damage to personal property such as cars, clothing or premises, caused by alleged defects in the publicly maintainable highway network, or a nuisance caused or permitted by the Colas (or its Sub-Contractor) which may relate to the services undertaken on the network.

In cases where damage is caused to the highway or highway assets, in an incident where the highway user is clearly at fault (e.g. collision with safety fencing through driver negligence), Colas will seek to recover, from the negligent party, the cost of repairing the damage.

It is important to maintain a thorough and robust protocol which can be followed by all staff such that the rights of Colas (or its Sub-Contractor), acting as Highway Authority, and Portsmouth City Council are not jeopardised by the manner in which claims are handled, and to set down minimum standards of behaviour and responses.

#### **Third Party Claims**

Third Party Claims represent an important aspect of managing the road assets in a Local Authority. As an indicator of performance the number and extent of claims give an indication of the success of the risk management strategy. As the financial value of claims settlements increases, the direct cost of uninsured losses to the Authority climbs. Colas manage the handling of claims in Portsmouth under the PFI contract.



Claims are entered in the Claims Register on receipt of any notification by Colas which intimates a claim. For any oral complaint, which has the potential of becoming a claim, Colas or the Portsmouth City Council Help Desk advise the Third Party claimant to submit the claim in writing.

Procedures are in place for handling Third Party Personal Injury claims, and Property Damage claims. Where necessary arrangements are made for the Investigations Officer to visit or otherwise contact the claimant to complete an Accident Report Form, and in other circumstances arrange a joint site visit and a full report and all relevant disclosure documentation.

Stated turn-around times are within five working days of the receipt of the letter of claim or other notification of the claim for Personal injury claims and within 10 working days for property damage claims. Where applicable, solicitors are instructed on behalf of Colas, and the Solicitors must confirm that they have taken over conduct of the Third Party claim within fourteen working days of their receipt of instructions from the Colas. If liability is admitted, Colas are bound by the admission up to the sum of £10,000. Settlements above £10,000 require the consent of Portsmouth City Council.

All new claims received, or actioned, within the previous month, are discussed at the Colas monthly review meetings with PCC.

### **5.5.2. Damage to the Highway or Highway Assets**

Procedures for recording and following up third party damage to the Highway or related assets are important as they represent the means of recovering legally justified repair and replacement costs.

Records of incidents where damage has been caused include the name, address, vehicle particulars and insurance details of the responsible party from inspection staff, the police or any other reliable source. A Damage Register is completed, records of which are kept for a minimum period of six years from the date of repair.

Different rules apply if the estimated cost of repair is greater than or less than £2000.

Where any of the following circumstances apply, any cost recovery proceedings are immediately ceased, although other legal action may be necessary;

- Unusually complex incident and subsequent claim (e.g. multiple collision)
- Alleged perpetrator denies or disputes liability
- No response is received from alleged perpetrator within six weeks of first application to alleged perpetrator
- Counter-claim is anticipated or received
- Other reasons, such as theft.

### **5.5.3. Third Party Revenues**

Opportunity to generate third party revenues is limited. The contractor is entitled to retain all advertising and licence fee income up to a threshold. Above the threshold revenues will be shared equally with the Council. The contractor is not entitled to receive or retain any charges levied under Section 74A of the New Roads and Street Works Act 1991 in respect of statutory undertakers.

Colas are currently rolling out a programme of street lighting and roundabout advertising throughout the City. Whilst this does generate income it also provides PCC with an annual allocation of free sites for community or local messages.

There is potential for the Traffic Management Bill to generate additional income but until the Bill is enacted the exact impact is difficult to predict. The contract makes provision for change when the Bill becomes law. This aspect of the HAMP will be subject to update to reflect opportunities and the Council's aspirations which will be outlined more fully in the TAMP.

### **5.5.4. Best Value and Comprehensive Performance Assessment**

It is a fundamental principle of the contract that the requirements of the CPA and Best Value are embraced. Colas has a duty to provide information, comply with CPA/Best Value requirements and that the service requirements ensure that key deliverables are achieved.

### **5.5.5. Partnering**

Throughout the contract the overall emphasis is on partnership through liaison, consultation and the fostering of a long term working relationship. A number of successful partnering workshops have been held using an independent facilitator, to achieve a wider and fuller understanding of the contract details and objectives. These have been attended by both the contract management and operational staff, and by a more corporate and general audience.

## 5.6 Risk Management

The basic proposition in the contract is that all the risk associated with the design, construction, operation and insurance of the network is transferred to Colas.

There are a few exceptions to this general rule where it has been demonstrated that better value for money can be obtained by the public sector retaining some or all of the risk. This is in accordance with the philosophy that risk should be allocated to the party best able to control that risk.

The significant areas in the contract that the public sector retains risk are set out below.

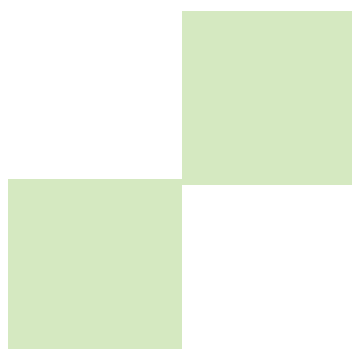
### a) Major Structural Repairs to Bridges and Highways Drainage

The public sector should retain responsibility for the catastrophic failure of these elements of the network subject to Ensign having maintained a satisfactory maintenance regime. The definition of the maintenance regime is clearly specified. In the event of a catastrophic failure the Council would bid for additional Local Transport Plan funding as at present. This is a key value for money issue where Colas would otherwise have had to price for a large contingency against an unknown and unlikely event.

### b) Change in Standards

It is important that the contract recognises the continuous evolution and flexibility of the network. Nevertheless it is not value for money to expect Colas to accept unlimited or uncapped liability for changes in standards over a 25-year period. Therefore above certain defined thresholds the Council accept responsibility for additional costs. The underlying assumption is that any major and expensive change in standards should also attract increased government funding.

The negotiated thresholds are £200,000 per annum or up to £400,000 in any three year rolling period.



c) Other Network Changes

The emphasis of the contract is for Colas to take responsibility for the existing network. They are also required to take responsibility for changes arising from development, highway management schemes or major road safety initiatives but will invoke a change mechanism to recognise any consequential increase (or decrease) in costs. The key aspect is that the revenue implications of any works must be assessed before the work is undertaken either by the Council or by a developer. This will require whole life costing to be delivered during scheme development. Once again the principle is that Colas cannot price competitively for unknown circumstances but there is a cost tolerance to avoid minor or trivial changes to the network causing the change mechanism to be invoked.

d) Insurance – Material Damage

The contract offers Colas a capped liability of £250,000 for material damage to the network. Normal custom and practice is for highways authorities to self-insure and the insurance market is therefore immature. A number of underwriters refused to quote, although the risk of catastrophic damage is very low. The Council has no claims experience of any significant financial liability arising from material damage claims so it was considered value for money for the public sector to accept this risk.

e) Interest Rate risk

Special Grant derived from PFI credits is fixed. Whether the grant is sufficient or not is dependent upon the level of future inflation and changes in interest rates. The underlying assumption is that interest rates will remain stable. An increase in interest rates will add to the Councils' costs but will be considered as part of the Councils' overall treasury management strategy where a large portfolio of borrowing and lending is managed to mitigate large year on year fluctuations.

c) Inflation Risk

The financial modelling assumes that inflation averages 2.5% per annum. An increase in inflation above this rate will be to the Councils' detriment and vice versa. Whether the Councils' revenue support grant and LTP settlement increases at, below or above the rate of inflation is impossible to predict over 25 years but is a retained risk.

d) Force Majeure

Despite all the provisions in the contract some events remain beyond the control of either the Council or Colas. Events such as war, invasion, revolution, nuclear explosion are all categorised as Force Majeure and may give rise to compensation payments from the Council to Colas to recognise costs and liabilities incurred as a result of the contract.

## 5.7 Data Management and Information Systems Development

Successful highway asset management is all about effective decision-making, based on accurate, timely information about the asset. This information is derived from systems and processes that make use of a large amount of disparate data. Effective management of this data is therefore fundamental if highway assets are to be managed successfully, using the asset data to support decision-making. It must be emphasised that there is a difference between "data" and "information" in this context; data becomes information only when it is put to constructive use and can assist the decision making process.

The European Best Practice Guide for Data Management for Road Administrations (WERD, 2003) defines data management as *"a set of processes and procedures that allows an organisation to realise value from the data that it holds"*.

In the context of highway asset management, best practice in data management requires an organisation to:

- Recognise that data itself is an asset that is vital to the effective management of highway assets
- Have a clear understanding of what data is needed to manage its highway assets including required levels of quality and currency
- Clearly define responsibilities for collecting and maintaining that data
- Have clearly defined processes in place for the collection or creation; storage and retrieval; and archiving or deletion of data
- Take a service-wide view to ensure that data is available to be shared and used by different parts of the organisation
- Minimise the collection and storage of redundant and duplicate data

The main benefits to an organisation of effective data management are:

- Better data quality that enables more effective decision making
- Improved service delivery based on better and more timely information
- A better understanding of the data needs of the organisation makes it more responsive to change
- Cost savings through more efficient use of data and reduce the amount of duplicate or redundant data that is collected and stored
- Sharing of data and information will improve co-operative working and lead to more co-ordinated service provision
- Employees will be better equipped to take decisions
- A more detailed understanding of the data held by the organisation will enable faster and more cost effective system development

### 5.7.1 Systems to Manage the Asset

Under the contract, Colas have agreed to provide a number of highways related engineering services to PCC. In essence, Colas will operate a single data repository containing the data about those services. Figure 5.3 below outlines those services to be managed by them and those to be managed by PCC.

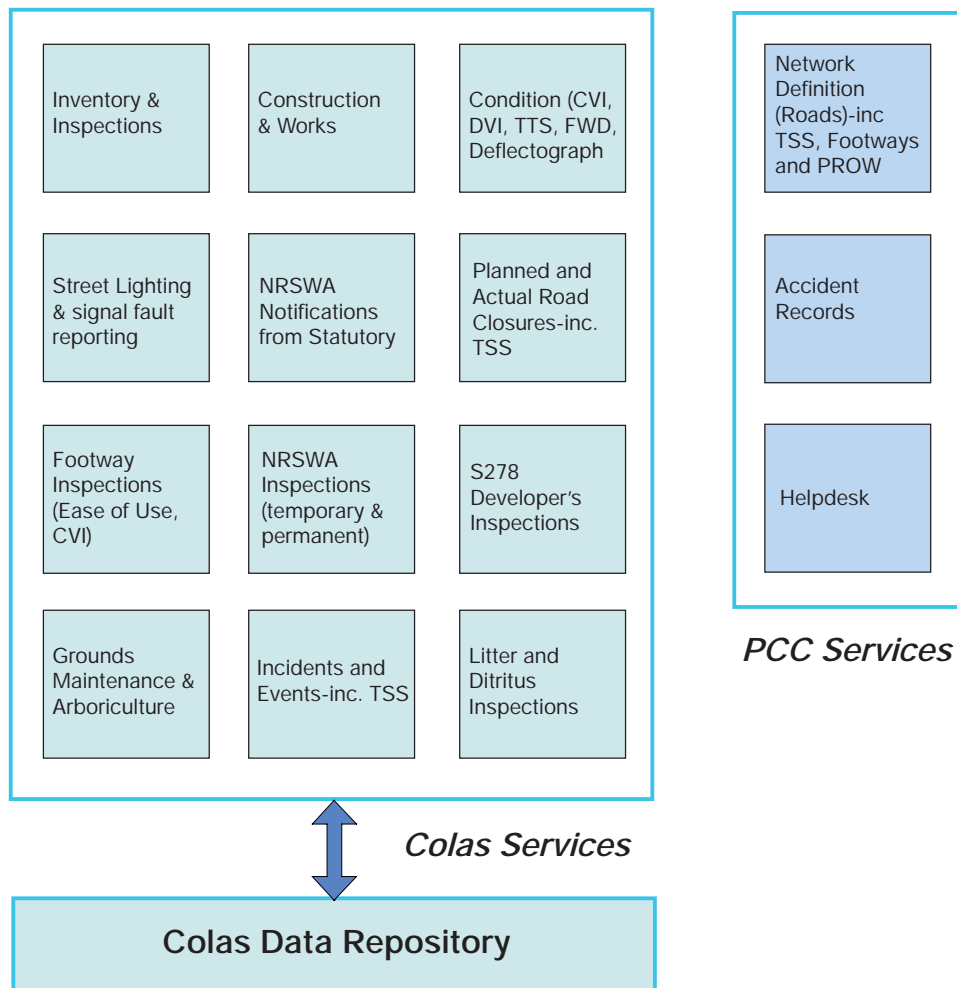


Figure 5.3 - Services

To manage the data repository, Colas has procured a suite of programs from EXOR, to replicate the systems currently used by PCC and to facilitate the interchange of data with PCC, as listed:

- Network Administrator module - this is the 'core' module on which the other modules rely and is used to manage network referencing data and inventory;
- Maintenance Manager module - for routine maintenance and works orders;
- UKPMS module - for management of pavement related data in accordance with the UKPMS standards;
- Lighting Manager module - for management of the lighting stock, including fault recording and energy calculation;
- Public Enquiry Manager (PEM) and Document Manager modules - to manage interactions with members of the public and businesses;
- Street Works Manager module - to manage Statutory Undertakers notifications and inspections;
- Structures Manager module - to manage the maintenance of all structures;
- Spatial Manager module - to manage the GIS data and background mapping;
- Map Capture module - to assist in the capture of map based data;
- Information Manager (IM) - to provide facilities for browsing data from Internet browser programs, including both textual and map based data.

To support these, a number of server based modules have also been procured (Database Services, Linear Referencing Services, Spatial Services, Web Services and Map Services).

Colas and PCC both have access to the Data Repository, the former to manage and maintain the data and the latter to view the data, via the browser based Information Manager (IM) module. The common access to the repository also facilitates maintenance of the network model, and of accident-related data.

Information concerning the condition of the network is kept in the EXOR database (supplemented by other databases), or archived according to rules agreed between Colas and PCC as and when necessary. The archives are available to PCC at their request. Data contained within the EXOR database can be consulted via PEM and/or IM at all times, for PCC's own use or to provide data in order to comply with the Freedom of Information Act.

There are also a number of applications that are not physically linked to the EXOR System, including the Network Condition Index (NCI) Model, the Traffic Signals Fault Management System, Street Cleansing, and the Grounds Maintenance & Arboricultural System.

In addition there are a number of interactions or exchanges of data between Colas and PCC with regards to the day-to-day operation of the Information Systems to support the delivery of the services to the public. These are outlined in Figure 5.4 below.

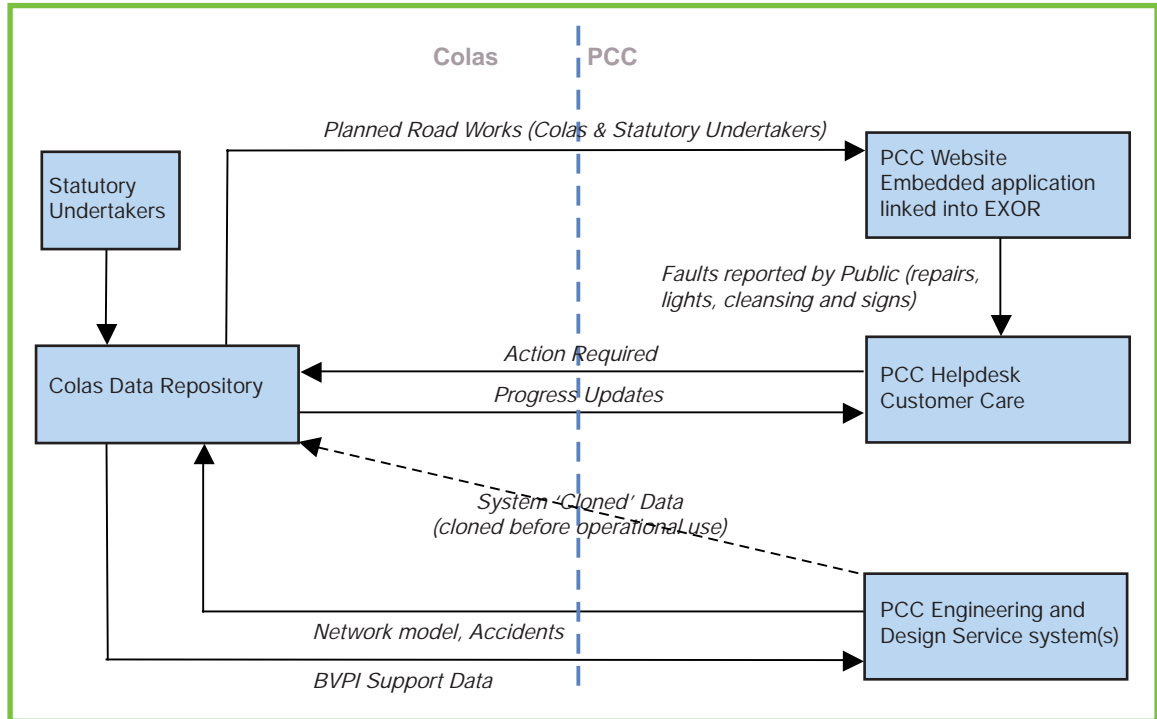


Figure 5.4. Colas and PCC EXOR Data Interchange

It is recognised that the starting point for effective asset management is a good knowledge of the asset inventory.

### 5.7.2 Data Management Regime

There are several keys to an effective data management regime:

- Analysis of needs
- Ownership
- Roles
- Continuous review

These steps have been considered by PCC in conjunction with the Colas and a procedure for data management designed.



The general principle of the data management regime is that Colas manage and maintain the data and PCC access the Colas systems via web browsers and the Virtual Private Network (VPN) to view the data. The key data flows are shown in Figure 5.5 below.

However it is essential that the data describing all Road Section Lengths, street gazetteer referencing and public rights of way (PROW) within the Colas accurately match the records kept by PCC. PCC shall retain responsibility for making all network changes including esu and Network Gazetteer (including adoptions, re-naming, de-commissioning, and physical changes to layout) and shall, having previously informed Colas' representative responsible for the network through the supply of drawings in digital format on the shared folder made available to this purpose on the Colas's EXOR server, action each network amendment as soon as is practicable to the main data repository. Colas shall be responsible for ensuring the consistency of data as between itself and PCC. Colas will promptly notify PCC of any discrepancies identified, which PCC shall promptly take action to resolve. Colas shall be responsible for maintaining and synchronising - where needed - with PCC's esu and Network Gazetteer, any separate gazetteers needed for management of the service, for example pavement management system, street lighting, and streetworks. Colas acknowledge that as the change mechanism is invoked and as additional work is defined through the call-off contract, amendments to the Network Definition will be required. Colas will assist PCC in identifying these.

PCC will also provide data from the PCC 'City Helpdesk' (using Public Enquiry Manager), to bring to attention of the Colas defects and other matters reported by members of the public. The Colas will, in turn, provide data back to PCC, with regards to the progress and resolution of those defects and other matters (again accessible via Public Enquiry Manager). Prior to service commencement, Colas prepared and agreed with PCC work instructions to enable PCC's customer assistants to manage customer contact relating to the Service.

Colas also provide data to PCC on road works and closures for inclusion on the PCC website. As a result of security considerations, no direct link can be established from the web to the EXOR server. Maps containing planned works and closures have to be published on the web server. They are obtained by PCC using Information manager and pasted on the web page.

PCC has access to the geo-data layers maintained by Colas. PCC can extract data compatible with ProViewer. This enables the City Helpdesk to support Colas in accurately dealing with customer enquiries.

PCC has provided Colas with a CD containing road accident data generally on a monthly in arrears basis in a format to be agreed with Colas, enabling the information to be loaded in the EXOR data base.

Figure 5.5 below shows how the data from the operational systems (the 'Inputs') will be held and processed in the Data Repository and processed to produce data to be made available to PCC and thence the public (the 'Outputs'). The ability to query and report on data graphically is important, and so the diagram highlights which modules are geographically based (using the Geographic Information System, GIS).

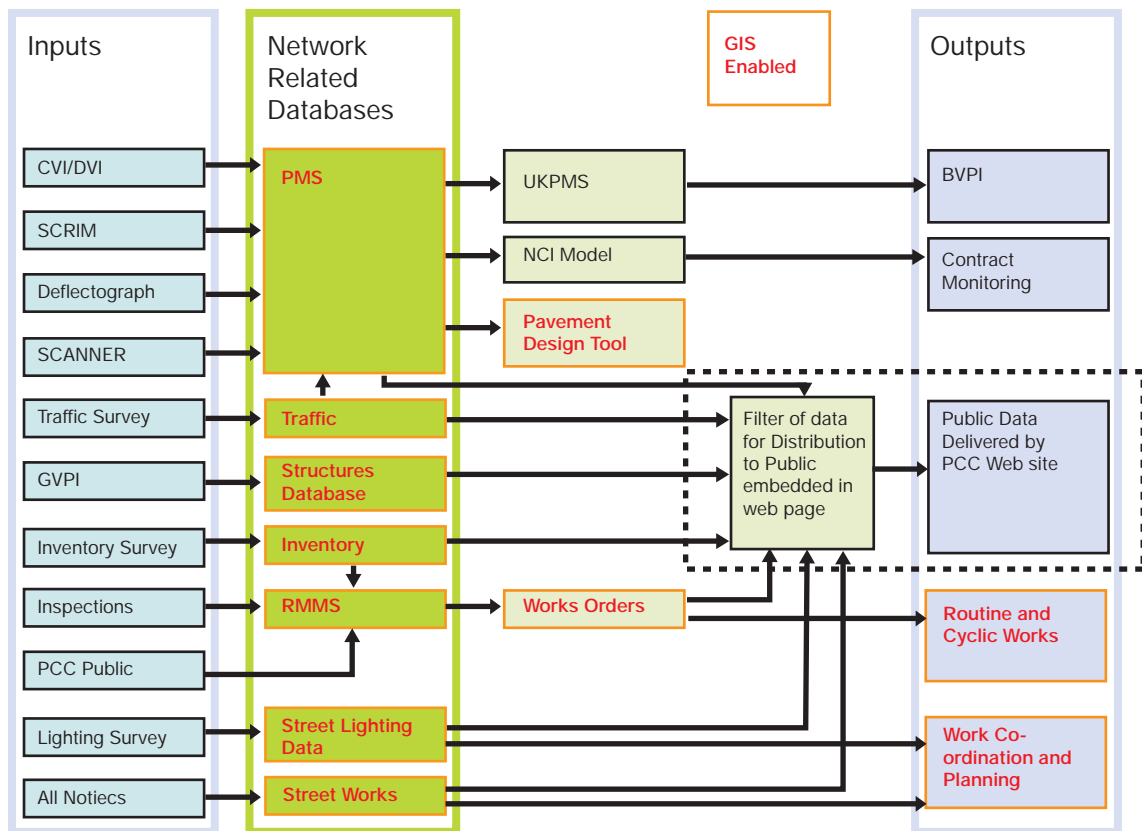


Figure 5.5. Key Data Flows



## 6. Service Delivery

### 6.1 General Approach

The Highways Management Contract Objectives are:

- To bring the City's road and footway network up to a fair to good condition and to maintain them in that condition for the next 25 years.
- To maximise the potential of the contract for all parties.
- To develop a proactive rather than reactive approach to Highways Management.
- To encourage a team spirit and flexibility.
- Seek "excellence" in terms of customer service and satisfaction.
- Ensure the benefits and success of the contract are recognised nationally.
- To ensure safety is always given the highest priority.
- To deliver innovation in terms of contract management and delivery.
- To promote Colas as the contractor of first choice.
- To promote and expand the "fence to fence" responsibility for the Network.

### 6.2 The PFI Contract

The service delivery processes are outlined in the Method Statements. They are devised in compliance with the Schedules to the Model Contract detailing the output specifications and are updated and revised at least annually.

The output specifications are derived from the Core Service Requirements (as defined in the Model Contract) which set out the core framework for judging the performance of the Colas. throughout the contract period

A periodical process of review is performed, to ensure that experience gained in operation of the service is taken on board in the service delivery.

The Payment Mechanism describes the financial penalties resulting from non-compliance with the specifications, as assessed by the monitoring and the auditing.

The data repository plays a paramount role in the monitoring. Events or defects occurring on the Network as well as enquiries are recorded in the repository against elements of the asset inventory. Information automatically retrieved from the database feeds monthly and annual reports.

### 6.2.1. Enforcement and Permits

#### Permits for Skips, Building Materials, Scaffolds and Hoardings

Requests for permits for skips or the storage of building materials on the highway are first recorded in Public Enquiry Manager (PEM). In the case of skip permits, the request must be from a company on the Approved List with Public Liability (PL) Insurance for five million pounds. In the case of requests to store building materials on the highway, applications can be accepted from contractors or individuals and the PL insurance is covered by the licence fee. Applications for roll-on-off containers are regarded as skip applications.



Information on the precise location and start/end dates of the required licence are collected and the application is assessed for approval based on whether the site is Public Highway, it's proximity to junctions, the width of the road and the needs of pedestrians. No licences are granted for grass verges. The Licence Coordinator may need to carry out a site visit if it is not possible to complete the assessment from a plan. If the proposed site has waiting restrictions, applications that request locations on double yellow lines are normally placed in the following categories:

- Major Road (A Class roads, main routes in and out of the city) – only allowed from 10am to 3pm on a daily basis
- Major Road (B & C Class roads) – only allowed from 9am to 4pm on a daily basis
- Minor Road – only allowed from 7.30am to 4pm on a daily basis

A check is made in the Streetworks Register by the Network Coordinator to ensure that the request does not cause a potential conflict with Streetworks. Consideration is also given to any special events affecting the site, with special attention being given to Fratton Park, the home of Portsmouth Football Club, on match days. If the request is refused as a result, the applicant is advised of suitable future dates.

If a licence is granted, the appropriate fee is collected and the licence is issued. Copies are given to the applicant, the police, the PCC Enforcement Team and are also held in Colas's offices and recorded in the Streetworks Register. The network team identify unlicensed skips/materials and monitor compliance with licensing conditions, making contact with the site to attempt to resolve issues where necessary. In the event that issues cannot be resolved, the matter is passed to the PCC Enforcement Team.

In the case of requests for permits for scaffolding and hoardings information is required on the width of the footway, the height and width of the proposed scaffold/hoarding and the proposals for erection/dismantling to allow a decision to be made. If a temporary Traffic Regulation Order (TRRO) is required, this is processed in accordance with Colas' procedure for Road Closures & TRRO. Other aspects of the licensing process are as described above.

### 6.2.2. Streetworks Incentives & Enforcement

Incentives are provided to the Statutory Undertakers to manage their on-street openings by developing a partnership approach with Colas and PCC, by building working relationships, and developing a 'shared understanding'. All concerned need to see this as being a 'true' working relationship that will require the right attitude of mind, and Colas are striving to bring all Statutory Undertakers on board with this philosophy. However, it is accepted that this will take time and perseverance with likely differing initial levels of success with different Statutory Undertakers. It is, however, considered that most Statutory Undertakers will embrace the opportunity to work in co-operation to reduce the impact of their works.

A trusting, open, relationship, and attitude of reasonableness are seen as the keys to success in respect of Street Works operations. Although Colas' emphasis on the working relationship is non-adversarial, and will always initially be by way of incentives, use is made of Street Works legislation (such as the fixed legal penalties for non-compliance under Section 74) whenever appropriate.

Work shadowing is encouraged so that Colas and Statutory Undertakers inspectors can gain an insight into the problems/issues faced by the individual organisations. It is considered that congestion can be minimised by discussing with the Statutory Undertakers the way that they undertake their work.

Colas endeavours through its management of the process and through innovation, to minimise the number of openings and the period of time for which they are open. Where opportunity exists (or is presented, for example, through new legislation) to offer positive incentives to Statutory Undertakers to plan further ahead, and complete works quicker on site, Colas exploit these.

Making information publicly available on forthcoming street works and work in progress acts as an incentive to all Statutory Undertakers and their contractors to ensure that works are started and completed on time. Close supervision and monitoring by Colas ensures that all fees, fines and charges that may be levied on the Statutory Undertakers under The Act (including sections 74, 74a, and 75) are effectively enforced, providing an added incentive for Statutory Undertakers to carry out works in a timely and quality-controlled manner. PCC recovers charges under Section 74, and Colas recovers inspections fees under Section 75.

In the spirit of the partnership approach, Section 74 charges for over-run of works are only applied when witnessed by Colas inspectors.

Colas monitors the overall level of emergency openings made by the individual Statutory Undertakers, on a monthly basis, and looks for particular trends. Intervention targets are set by Colas (developed based on experience) and where a concerning trend is observed, Colas discuss the situation with the Statutory Undertakers concerned. This may then prompt action for Colas to investigate the circumstances of individual openings to ensure that the emergencies were in compliance with the definition in the Code. Although this is a difficult area, with Colas not able to take any specific action against the Statutory Undertaker, it is, nevertheless, considered that such monitoring and discussions will enhance the working relationships. This may also help to bring

forward planned programmes of works by Statutory Undertakers where high incidences of emergency works persist.

Where a reinstatement fails on an inspection, and the Statutory Undertaker has not notified Colas that defect has been repaired, Colas prompt an 'Investigatory Inspection' (as allowed under the Act). This process is repeated, and further charges made, on a monthly basis until the defect is acted upon by the Statutory Undertakers concerned. In the spirit of the working relationship, if on inspection the defect is found to be repaired, Colas change the inspection type to a 'Defect Inspection', thereby avoiding the need for a further visit and additional charges. Colas is aware that within the implementation of section 79, the new Code of Practice for recording underground apparatus, there is an opportunity for Colas to develop its asset management database to cover this aspect. Colas would propose to share the costs with the Statutory Undertakers. Whilst not directly acting as an incentive for the Statutory Undertakers, there would be indirect benefits through minimising record search times and reducing likelihood of accidental damage during openings in the street. As with Colas' other proposals, this provides an opportunity to work more closely with the Statutory Undertakers. This will establish a more effective dialogue between the local Highway Authority (Colas) and the Statutory Undertakers, leading to shorter and better-programmed street and road works.

The Traffic Management Act modifies the New Roads and Street Works Act 1991 (NRSWA) and introduces significant new powers and responsibilities for Statutory Undertakers and the Highway Authority (Colas.).

A 'single point of contact' is responsible for the issue of permits to Statutory Undertakers and this point of contact are responsible for all liaison within Colas and PCC together with the attachment of conditions to the permit. Consideration is given to the retrospective permitting of emergency openings to introduce additional control of these works.

The scope of conditions which may be attached to permits will be considerably extended by the new legislation and, where necessary, full use will be made of the powers relating to the timing of works and directing Statutory Undertakers where to lay apparatus. The Traffic Management Act proposes to increase fixed penalties and fines for offences under the NRSWA 1991 and these will assist in providing "incentives" to the Statutory Undertakers as described above. However, it is envisaged that the emphasis will always be on a good working relationship and non-adversarial approach.

PCC acknowledges the benefits of good co-ordination of street works and the consequential impact on congestion. Colas are encouraged by PCC to ensure parity in their treatment of work street works promoted either by third parties or directly by PCC. Cleansing and Graffiti Removal

Portsmouth City Council is committed to achieve high standards in complying with their statutory obligations under the Environmental Protection Act, applying principles of the Code of Practice for Litter and Refuse (COPLR) and BVPI 199. The contract sets out the specifications accordingly.

### 6.2.3. Cleansing and Graffiti Removal

The Street cleansing Method Statement and operational plan have been developed in order to ensure that a robust cleansing regime is in place to comply with the standards and requirements. This is based on the following zoning:

- Shopping Precincts
- Local Shopping Areas
- Guildhall Square Including all Steps and Balconies Open to the Public
- Guildhall Walk and Surrounding Areas
- Principal Highways
- Seasonal Roads Non-Residential – Summer / Winter
- Seasonal Roads Residential – Summer / Winter
- Seasonal Residential Alleyways – Summer / Winter
- Residential Highways EPA Zone 2 Category F, Category F1, Category F2
- Designated Footpaths
- Designated Car Parks
- Pay and Display Car Parks
- Sea Front Pay and Display Car Parks
- Heritage Areas - Hard and Hard Interchange
- Tourist Area Roads
- Tourist Area
- Non Amenity Beaches
- Subways and Highway Network Footbridges
- Football Block
- M 275 Motorway
- M 275 Motorway Slip Roads
- Litter Bins
- City Wide Dog Bins
- Bubble Gum Removal
- Offensive Graffiti Removal
- Non Offensive Graffiti Removal
- Weekly Graffiti Scout - Designated Areas
- Public Perception - Non Highway Areas

For each zone are defined the grade to be achieved by the specified time, and then the grade to be maintained during the specified periods.

Operatives are formed into teams to bring to COPLR Grade A, those areas required to be completed by the specified time. The operatives are then move on to the areas to be cleaned or litter picked. Specific Litter Picker Teams are constituted.

Additional resources are dedicated to the Gold Zone Initiative, as part of PCC's bid to develop the highest standards in areas such as Shopping Precincts and Guildhall area. Residential roads have a "Maintenance and Spring Clean Day", particularly where car parking creates access problems. This also incorporates general civil engineering maintenance, including weed removal, street cleansing and gully cleansing, in order to ensure every road is maintained to the required standard. An annual programme is submitted and agreed containing names of roads, dates of proposed closures, and details of diversions required.



All offensive graffiti is blanked out using a water based emulsion within one hour of notification or discovery. A Works Order is then issued to a specialist contractor, who then removes the graffiti within 28 days of being notified.

Inspections are performed on a daily basis, to check the quality of the operations and the compliance with the specifications. The data is logged in the repository and is available for reports and performance indicators.

The system also records complaints, times of response, and using mapping systems, record areas of continued problems/incidents to assist in long term decisions. PCC lines of action are also recorded on the Exor system.

In addition to the carrying out of the cleansing function, Colas assists PCC with the enforcement, in providing PCC with data and assisting them in taking action against those who commit offences.

Education and awareness campaigns are promoted. These campaigns include working with community associations, interest groups and schools, support for National Spring Clean, facilitating local and national campaigns such as environmental workshops, Tidy Schools Competition, residents clean up days, litter picks, etc.

#### 6.2.4. Highway Assessment Surveys

The contract requires various surveys to be carried out every year machine in order to collect data for the calculation of the Network Condition Index NCI.

The PCI is derived from a deflectograph survey, the SRI from a SCRIM survey, and SCI and FCI from visual surveys (CVI and/or DVI).

The overall process of assessing the condition of the network comprises the following steps:

- Survey commissioning

The machine surveys are subcontracted to accredited companies. Equally accredited inspectors carry out visual surveys. The surveyors supply Colas copies of surveyor accreditation certificates and details of in-house audits/validations that are carried out on the data.

- Data collection

The Deflectograph survey is carried out on the Principal Road Network. The SCRIM is carried out on Primary and Secondary roads. The visual surveys CVI is carried out on carriageways of all the Primary, Secondary and Tertiary roads, where as DVI is carried out on footways of Primary, Secondary and Tertiary roads. The data collection of visual surveys are carried out by the using the UKPMS visual survey manual.

- Pre-processing of survey data  
The data collected for SCRIM is processed through the Highways Agency SKID system and data for Deflectograph is processed through Highways Agency PANDEF system. This data is then exported and put through the UKPMS conversion software to produce the HMDIF file which is sent to Colas.
- Loading to Exor  
The loading of the survey data is done through the EXOR system. This system only accommodates the data into HMDIF format. These HMDIF files are checked for any errors prior to loading onto the system.
- Extraction of the data  
Once the survey data is loaded on to the EXOR system, various checks are applied to the collected data with the help of Excel based software which also rearranges the data into a systematic format so as to ease the process of calculating the NCI and FCI.
- NCI model  
After the required checks the Excel spreadsheets containing the data is then loaded to the software specifically developed for the project, which applies the rules set out in the contract to calculate the NCI and the FCI.

The overall process is checked and validated by an Independent Certifier.

PANDEF is inappropriate for use on the covered concrete sections, which constitute the majority of the Portsmouth network, as the functions embedded within it to transform deflectograph measured deflections to remaining life were developed from data on fully flexible pavements.

Colas is to develop an alternative method based on a rational design approach, which has been and will be used for the pavement design.

The principle of this approach is to use the information such as deflections, traffic data and composition of the road, to derive an accurate assessment of the structural condition of the carriageway, based on the mechanical properties of the actual materials.

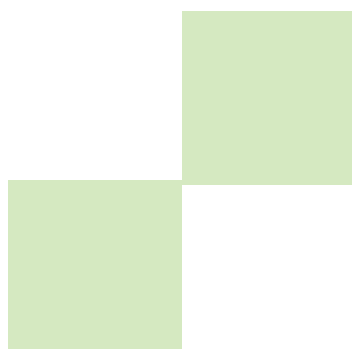
It is expected that during the validation process both systems will run in parallel.

## 6.5 Procurement of Other Works and Services

The Highways Management Contract provides significant opportunities for PCC to maximise the delivery of its integrated transport programme.

In particular during the first five year core investment programme, the Council is seeking to maximise the potential of each scheme by working with Colas to deliver added benefits through combining maintenance work with road safety initiatives and other capital investment. This has already delivered cost savings to the Council and minimised disruption to residents.

Furthermore the Council is now implementing the "Portsmouth Streets Ahead" project. This seeks to provide efficiencies through closer working between highway design and maintenance teams, reducing procurement costs by using Colas as its Contractor of choice, and in doing so minimising site supervision costs. The latter point is particularly important because if Colas are employed to implement a scheme they have the incentive of doing it right first-time as they will be maintaining the work.



# 7. Implementation of the HAMP

## 7.1 Implementing Asset Management in PCC

The Highways Management Contract not only fulfils the requirements for the production of an asset management plan but it also delivers many of the outcomes required. Effectively, the contract delivers improvements to carriageway, footway, street lighting and structures over the first five years and seeks thereafter to maintain them in a fair to good condition. In general the requirements of the relevant codes of practice have been adhered to, and prior to award of the necessary credits consultants appointed by the Department for Transport independently reviewed the scope and specification of the contract.

However, the contract goes beyond highways management to encompass most aspects of corporate working. This is demonstrated by the identified contributions to corporate priorities.

There is also a slow but progressive culture change taking place throughout the whole organisation. Whilst in the past Highways Management has often been seen as the poor relation within Local Authorities and as a corporate priority, there is a slow realisation that without a well-maintained highway infrastructure it becomes difficult to deliver any service effectively.

In parallel with the culture change has come rational policies relating to ensuring the maintenance implications for works are duly considered prior to implementation. The mechanism in the contract makes it clear that any changes to the network which increase, or decrease, contractual liabilities have to be financed by the Council through the payment of a lump sum or through annual payments over the remaining life of the contract. This has resulted in the whole life costs being addressed at design stage and maintenance problems being identified and designed out.

In parallel with this, and in conjunction with the County Surveyors Society, PCC is working on implementing a commuted sum regime for Development led highway works. This again will address the full increase, or decrease, in maintenance liabilities resulting from development led work on the highway.

## 7.2 Improvement Actions

The following key improvement actions have been identified:

IMPROVEMENT ACTION	TARGET DATE
Complete Inventory	31 July 2006
Expand contract to encompass all Council owned publicly accessible land.	2007
Deliver closer working between Capital design and maintenance teams	December 2006.
Review and Update HAMP	Biannually starting in January 2007.
Update Contract Method Statements	Annually
Review and update contract KPI's	Annually
PCC to contribute to Colas monthly newsletter	March 2006
Develop more robust and meaningful reporting mechanisms and formats	July 2006
Maximise Third Party Income to the contract	On-going

*Table 7.1 Improvement Actions*

## 7.3 Change Management

The Highways Management Contract acknowledges that over the 25 year life of the contract there will be significant change not only in terms of changing patterns of travel and transport but also in terms of the extent of the highway network and expectations in service delivery. Accordingly there is a robust change mechanism included in the contract. The Council has the right at any time to require a variation in the design, quality or quantity of the Service. This will be a "Council Change" and as a safeguard there is a mechanism under which Colas may object to the Change if it is unreasonable or unsafe, and also may be compensated if it will increase costs or lessen revenues.

This has led to a need to develop a policy for charging commuted sums to Developers to cover any changes in the Network.

Additionally, there is a need to review whole life costs when preparing capital highway schemes, and ensuring highway design teams work closer with Colas's maintenance design teams to deliver "maintenance led" design solutions.

## 8. Communication, Monitoring and Reporting

### 8.1 Internal Communication

The primary channel of communication is between the small client contract management team within the Council and Ensign/Colas management team. This ensures that the contract provisions are not by-passed or changed unilaterally, and that both parties are aware of all issues.

Major policy decisions are taken through the contract Network Board to the Council's Strategic Directors Board. This provides strategic guidance before issues are considered by Members.

As necessary specific work groups are set up to address particular issues. At present these have been established to cover the following areas:

- Commercial Issues
- Project Development
- Customer Interface
- IT

In addition to this partnering workshops have been held with have generated working parties to tackle specific issues.

The Council's internal communication process is detailed in Figure 8.1.

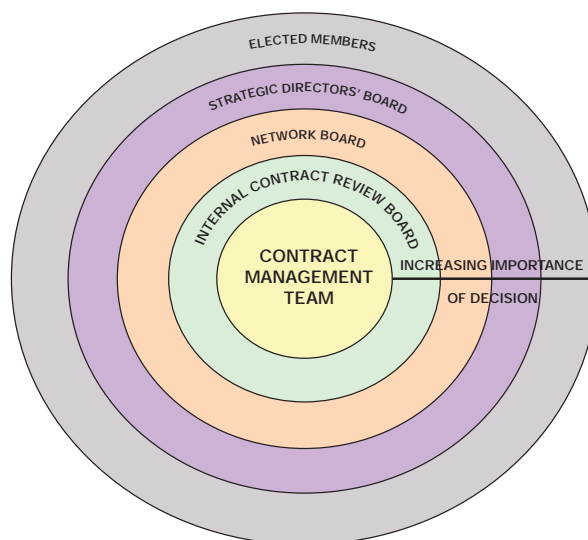


Figure 8.1 Council Internal Communication Process

## 8.2 Communication with Stakeholders

Colas attend and provide support to any meetings or Local Focus Groups ("LFG") in order to encourage the involvement of communities in service delivery to meet local objectives and priorities and to discuss new proposals, problem issues and ongoing works

Colas liaise, on a regular basis or as and when appropriate, with the following groups:

Outside Portsmouth City Council:

1. All statutory Undertakers
2. Emergency Services
3. Neighbouring Local Authorities
4. Disability Forum
5. Cycling Forum
6. Various Residence Associations

Within PCC (in addition to the PFI Project Management Team):

1. Traffic Manager
2. Special Events Co-ordinator
3. Port Authority
4. Other PCC Departments

With all of the above groups the general topics discussed include the following:

1. Programming of Core Investment Work for Highways, Street Lighting and Structures
2. Co-ordination of the works with PCC, Statutory Undertakers etc.
3. Routine Maintenance works
4. The needs of special interest and minority groups etc.
5. Liaison with the general public

Information from these meetings (some of which are held with a number of outside bodies at the same time) is then feed back into the Management Structure in order to assist in the delivery of a high quality services for residents and visitors to Portsmouth.

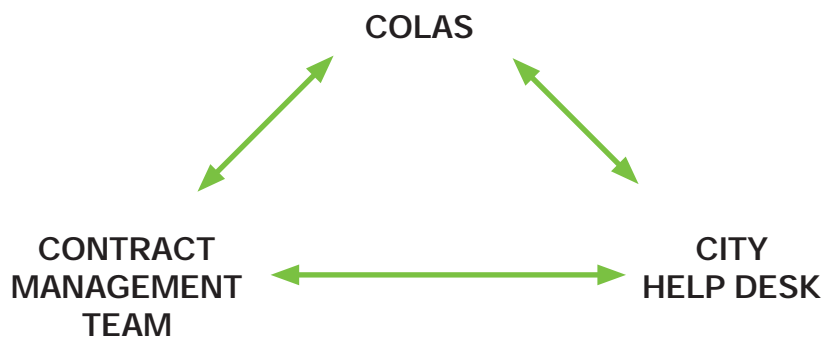
Colas carry out annual independent customer satisfaction surveys and the results of these form part of the feedback to Local Focus Groups. Action plans will be developed from the results as an incentive for continuous improvement

### 8.3 Dissemination of Information

With the volume of work being undertaken by Colas, particularly during the first 5 years of the contract, dissemination of information to stakeholders is critical. Whilst the City Council Helpdesk is at the heart of the management of the customer interface, a number of strategies have been developed to promote effective communication:

- Colas produce a 5-year indicative programme of works, an annual and quarterly programme, and a weekly whereabouts sheet. This information is circulated widely within the Council and to stakeholders via email.
- The wide circulation of Emergency telephone numbers for 24 hour response.
- The proposed establishment of a project website linked to the Council website delivering not only E-Government agenda but also posting more detailed information on specific schemes and work programmes.
- The use of local media, such as Council publications, local radio and the local newspaper.
- The attendance by Colas at Local neighbourhood meetings and local strategic partner meetings.
- The establishment of an accessible local depot at Walton Road, Portsmouth.

As indicated below there is a three way information flow between the contract management team, the City Helpdesk and Colas. Whilst the bulk of customer and stakeholder contact is initiated via the City Helpdesk, Colas are responsible for the consequential resolution of incident or dissemination of information.





## 8.4 E-GOV Requirements

The overall objectives of E-Government are to:

- Provide better and more efficient services to businesses and citizens
- Improve efficiency and openness of government administration
- Secure substantial cost savings to the taxpayer

These will result in the provision of services of “world standard in quality, efficiency and value for money”.

In particular E-Government will:

- make services more convenient and accessible
- make services faster, more responsive, open and accountable
- make services more cost effective
- join related services to improve customer services
- improve customer satisfaction
- promote economic regeneration
- promote social inclusion
- improve staff satisfaction
- E-enable transactions
- E-enable consultation
- E-enable access channels e.g. Digital Television (DTV) and One Stop Shops
- E-enable technologies e.g. Customer Relations Manager (CRM) and Graphical Interface System (GIS)

Portsmouth City Council and Colas will achieve the objectives of E-Government by the provision of the following facilities on our collaborative web sites:

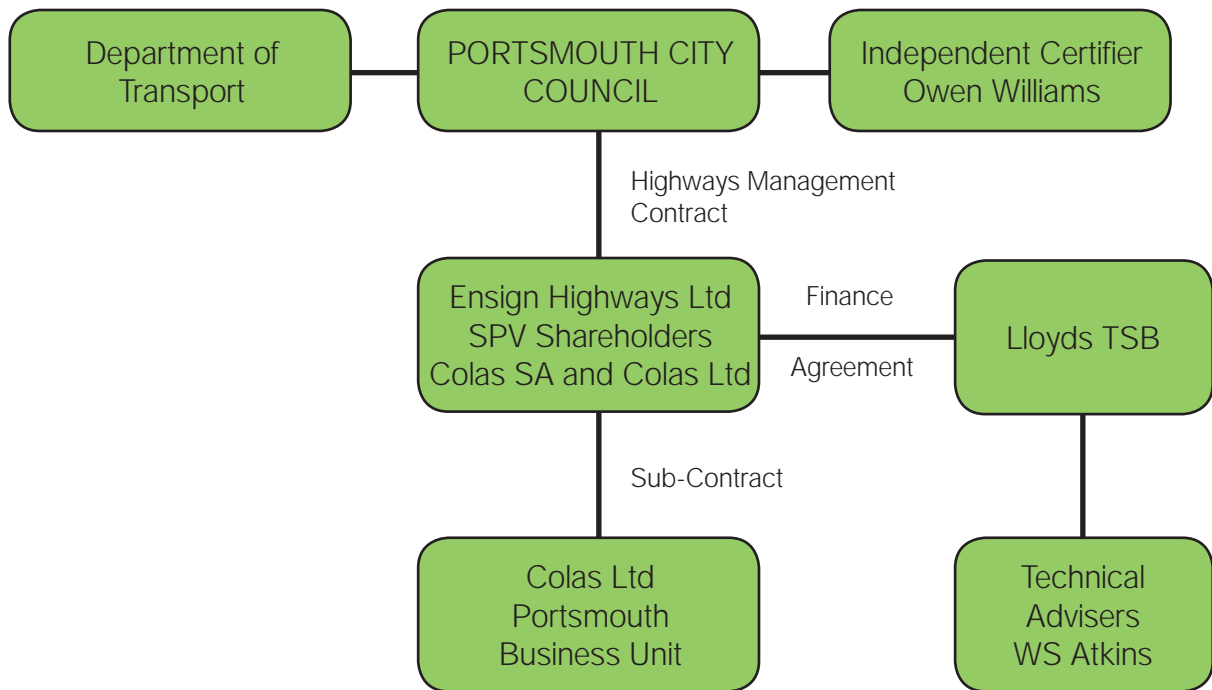
- reporting of faults and defects
- receive enquiries regarding specific issues or services
- application for the provision of entrance markings and vehicle crossings
- application for skip, hoarding and road opening permits
- on line payment and refund of the above
- downloading of application forms for alternative methods of payment
- programmes for both PCC and Colas works and schemes
- programmes for Statutory Undertaker works and schemes
- winter maintenance information
- computer links with the City Help Desk to also E-enable customer enquiries
- development of a GIS customer interface for the visual presentation of information

## Appendix A – Abbreviations and Glossary of Terms

Asset Management Term	Definition
BVPI	Best Value Performance Indicator
CIP	Core Investment Period
CIW	Core Investment Works
HAMP	Highways Asset Management Plan
LPI	Local Performance Indicator
LTP	Local Transport Plan
LSP	Local Strategic Partnership
NCI	Network Condition Index
PFI	Private Finance Initiative
TAMP	Transport Asset Management Plan
VM	Value Management
The Asset	The entire extent of the Highway, from boundary to boundary, and including all physical infrastructure that is owned and/or maintained by PCC
Asset Components	A discrete type of asset infrastructure that comprises the Asset (e.g. street lighting, drainage, carriageway and footway pavements, signs, markings etc.)
Asset Group	An ad-hoc grouping of asset components, linked for management and reporting purposes in the HAMP (note that this may <i>not</i> be the same as the Delivery Grouping)
Delivery Groupings	A logical grouping of services for the purpose of planning effective delivery of maintenance and operation to meet current objectives (note that these groupings may affect different asset components and may change from time to time depending on the policy objectives)
Demand Aspirations	The non-condition related performance requirements of the asset.
Gap Analysis	The process of identifying differences ('gaps') in performance or processes between the 'current' and 'desired' states.
Improvement Plan	The plan of action identified to bring the Authority's levels of service, including condition of the assets, and processes, up to the Desired standard(s)
Improvement Programme	The sequence and priority of tasks identified to deliver the Improvement Plan (generally focussed on a one year look ahead, but also with key longer-term milestones included within it.
Life Cycle Management	The process by which parts of the asset are managed and maintained throughout their service life – from installation, through operation, to decommissioning. This may be applied to individual asset components, to whole streets, or to an entire network or district.
Option Identification	The process of identifying delivery options (including maintenance and operation, and rehabilitation and construction schemes) to achieve a given objective – expressed in terms of addressing the gap between existing and desired level of service or condition
Performance Measure	The definition of the measurement to be made and procedure to be adopted, to identify an objective level of performance
Performance Targets	The target level of service to be achieved, expressed as a value for each contributing performance measurement

# Appendix B – Organisation Charts

## Portsmouth Highways Management Contract Structure



## Appendix C – Current Performance Indicators and Targets

Number	Description	Whole Year 2004/2005	Target
96	Condition of Principal Roads	65.47	Due to changing survey methodology, targets will be set in the 2006 BVPI reporting process when a full assessment of the implication of the PFI has been made.
97a	Condition of Classified Non-Principal Roads	13.47	
97b	Condition of Unclassified Roads	23.48	
186a	Principal Roads Not Needing Repair	11.85	
186b	Non-Principal Roads Not Needing Major Repair	330.149	
187	Condition of Footways	12.73	

# Appendix D – Sample Monthly Service Report

## Portsmouth Highways Management Contract Structure


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**PORTSMOUTH PFI**

**Monthly Report**

**October 2005**

 **Golden River  
TRAFFIC**

**Golden River Traffic**  
**Field Services**

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## Availability Statistics

### Traffic Flows

All count data taken from the 3 measurement points during this month have been provided via E-mail in raw format to [grt.portsmouth\\_instation@goldenriver.com](mailto:grt.portsmouth_instation@goldenriver.com).

Table 1 shows the current month position

Site	Total Hrs in the month	Total Down	Down %	Availability
1	744	0.00	0.00%	100.00%
2	744	0.00	0.00%	100.00%
3	744	0.00	0.00%	100.00%
Total	2232	0.00	0.0000%	100.00%

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## Availability Statistics

### Traffic Flows

Table 2 shows the rolling 6 month position

Site I.D.	Total Hrs Available	6 months down time						% down over 6 mths	Contract Maximum	6 Month availability	Contract Requirement
		May	June	July	August	September	October				
1	4416	0	0	0	0	0	0	0.0000	1.00%	100.0000%	99.00%
2	4416	0	0	0	0	0	0	0.0000	1.00%	100.0000%	99.00%
3	4416	0	0	0	0	0	0	0.0000	1.00%	100.0000%	99.00%
Total	13248	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	3.00	16.667%	99.00%



## **Faults**

### **Faults for October 2005.**

#### **Faults resulting in Data Loss**

There were 0 faults resulting in data loss in October.

#### **Faults with no Data Loss**

There were 2 faults reported during the month of October with no data loss.  
 Faults for October are detailed below.

#### **Outstanding Faults**

There are no outstanding faults.

Date	Fault No.	Site	Fault	Corrective Action	Date	Data Loss	Outstanding	Full Clear
13-Oct-05	009	1: M275	No Comms.	No Comms. Unable to contact site remotely. Dialed site. Observed working OK.	13-Oct-05	No	No	Yes
25-Oct-05	010	1: M275	No Comms.	No Comms. Unable to contact site remotely. Dialed site. Observed working OK.	25-Oct-05	No	No	Yes

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### Faults Over Last Twelve Months – By Month

Type of Fault	Nov'04	Dec'04	Jan'05	Feb'05	Mar'05	Apr'05	May'05	Jun'05	Jul'05	Aug'05	Sep'05	Oct'05	Total	Faults with Data Loss	Site Visits Required
Instation													0		
Telemetry													0		
PC Anyw here													0		
MI TS Replaced													0		
MI TS Locked up													0		
MI TS Lock-up (Lightning)													0		
MI TS Clock							1			1			3		
MI TS Charger													0		
Loop Card													0		
Loop Termination													0		
Loop Joint													0		
Loop													0		
Modem							1						1		1
Line Fault													0		
BT Pager System													0		
Power Failure				1					1				2		2
RCD													0		
Data Retrieval													0		
Merged Data													0		
Configuration Change													0		
Software Upgrade													0		
Other							1			1		2	4		2
<b>Total Faults</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>5</b>

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## **Faults Over Last 12 Months – By Site**

Type of Fault	Site 1	Site 2	Site 3	Total
Instation				0
Telemetry				0
PC Anywhere				0
M ITS Replaced				0
M ITS Locked up				0
M ITS Lock-up (Lightning)				0
Clock Changes	2		1	3
Charger				0
Battery				0
Loop Card				0
Loop Termination				0
Loop Joint				0
Loop				0
Modem	1			1
Line Fault				0
BT Pager System				0
Socket Fault				0
Power Failure	1		1	2
RCD				0
Data Retrieval				0
Merged Data				0
Configuration Change				0
Software Upgrade				0
Other	4			4
<b>Total Faults</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>10</b>

Please Note: Totals of faults may not be equal to Monthly Total due to Fault Log being referenced to more than one site.

## Routine Maintenance

The programme for September 2005 routine maintenance was carried out as detailed below.

Site	Date	Date Complete	Notes
1	12-Sep-05	12-Sep-05	
2	15-Sep-05	15-Sep-05	
3	13-Sep-05	13-Sep-05	

## Verifications

### Round 2

Site	Target Verification Date	Date Verified	Actual Date for Report	Pass/Fail
1	07-Jul-05	07-Jul-05	26-Jul-05	<b>PASS</b>
2	08-Jul-05	08-Jul-05	26-Jul-05	<b>PASS</b>
3	11-Jul-05	11-Jul-05	26-Jul-05	<b>PASS</b>

### Round 3

Site	Target Verification Date	Date Verified	Actual Date for Report	Pass/Fail
1	12-Sep-05	12-Sep-05	30-Sep-05	<b>PASS</b>
2	13-Sep-05	15-Sep-05	30-Sep-05	<b>FAIL</b>
3	14-Sep-05	13-Sep-05	30-Sep-05	<b>PASS</b>

### Round 4

Site	Target Verification Date	Date Verified	Actual Date for Report	Pass/Fail
1	01-Dec-05		31-Dec-05	
2	02-Dec-05		31-Dec-05	
3	05-Dec-05		31-Dec-05	

## **Equipment Inventory**

<b>Location</b>	<b>Description</b>	<b>Serial No.</b>
Site 1	Marksman ITS	254637
Site 2	Marksman ITS	254635
Site 3	Marksman ITS	254636

## Appendix E – Works Programmes

### CORE INVESTMENT PROGRAMME

Indicative Quantities to be treated / replaced

<b>Number</b>	Carriageway & cycleways	1,400,000	m2
	Footways	445,000	m2
<b>Number</b>	Columns	12,000	No
	Sign posts	2,000	No
<b>Number</b>	Inspections	125	No
	Structural enhancement	60	No

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