



# The Development of the Sheffield Highway Maintenance PFI Project

**IHT Yorkshire & Humberside Branch Conference  
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**Sheffield City Council**

**PFI Project Team Technical Workstream Leader**

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# Introduction

- **Background**
- **Process to Date**
- **More detail of some of the Process to Date issues eg scope, funding, data, documentation etc**
- **Lessons learned**
- **Questions**

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# Background 1 – Scale of the Project and Current Condition

- 2000 km Carriageway and 3400 km Footway - bottom quartile for Met Authorities for all 4 BVPI condition indicators
- 65,000 Street Lighting Columns - 85% substandard
- 600 Bridges – current BCI lower than desirable
- 480 Traffic Signal Sites and a further 300 items of ITS Infrastructure - 30% of stock > 15 years old
- 35,000 Highway Trees – 75% mature/over mature

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## Background 2 – What Is Different About a PFI Contract?

- **Government Funding**
- **Long, fixed term of contract – eg 25 years**
- **Complicated procurement – Competitive Dialogue**
- **Output Specification**
- **Majority of risk passed to PFI Provider**

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## Process to Date (1)

- **January 2006 - Authorities were invited to submit an EOI for a Highway Maintenance PFI project**
- **February 2006 - submitted Expression of Interest for Street Lighting PFI Project**
- **September 2006 - Sheffield submitted Highway Maintenance EOI**
- **February 2007 - Sheffield submitted Street Lighting OBC**
- **October 2007 –Street Lighting OBC approved**

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## Process to Date (2)

- In December 2008 DfT invited 5 of the Authorities that had submitted EOIs, including Sheffield, to refresh their bids and present their proposals
- At the presentation in February 2008, Sheffield were able to demonstrate what they had achieved over the previous 18 months namely:
  - Determination of scope
  - Project Delivery Team established and external advisors appointed
  - Further condition data and inventory collection
  - Further soft market testing
  - Identification of interfaces with Supertram and with other Council projects
  - Additional stakeholder consultation
  - Planning for business transfer of assets, contracts and staff
  - Development of “New Approach” to improve affordability and value for money
  - Broad Political support and approval for additional funding

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# Project Delivery Team

Project Sponsor – John Mothersole

Highway Maintenance PFI Project Board  
 John Mothersole, Laraine Manley, Simon Green, John Charlton, Frances Woodhead

Project Director – Michael Platt

Project Manager – Wendy Woodhead

Project Assurance  
 Margaret Goddard

Workstream Leaders

Technical  
 Ian Kirby

Legal  
 Amy Oakley

Financial  
 Jayne Clarke

Business Transfer  
 John Blackham

HR  
 Graham Hudson

Procurement  
 Liz Buck

Communications  
 Laurence Alexander

Mott  
 MacDonald

DLA  
 Piper

PwC

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# Condition and Inventory Data (1)

- **Carriageway**
  - 100% CVI
  - 100% SCANNER (A,B and C Roads)
  - 100% Deflectograph
  - Significant levels of SCRIM and Patching Data
- **Footways**
  - 100% DVI (Cat 1, 1a and 2)

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## Condition and Inventory Data (2)

- **Bridges**
  - 100% General Inspections (but old)
  - Principal Inspections for 90 key structures
- **Street lighting/Signals - 100% inventory**
- **Video survey of entire network**

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# Development of New Approach (1)

- Sheffield's EOI bid (£733m) required all of the national pot of PFI credits
- Since the EOI, inflation and changes in discount rate would have increased this figure so a way of trimming back was required
- Carriageway element of EOI bid had been based on the Network Condition Indicator Approach used on previous Projects
- Original NCI approach heavily dependent on structural condition as measured by Deflectograph which would result in large quantities of full reconstruction which may not actually be necessary and impractical from a traffic management point of view

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## Development of New Approach (2)

- **Went back to basics which led to the “New Approach” and resulted in the development of a new NCI for carriageways (CCI) which included parameters important to stakeholders but excluded the structural requirement**
- **Enables Service Provider to select less invasive and therefore less disruptive treatments**
- **Achieves same level of improved safety, ride quality and visual appearance as Eol but at lower cost**
- **Separate requirement to ensure structural condition does not deteriorate**

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## Process to Date (3)

- **March 2008 - Chosen as one of three Pathfinder Authorities**
- **September 2008 – PIN issued**
- **September 2008 – Held Industry Day**
- **September 2008 – Gateway Review 1 completed**
- **September 2008 – Soft Market Testing Round 3**
- **Project (including objectives and scope) approved by Cabinet (September 2008) and by Council (October 2008)**
- **November 2008 - Submitted the Outline Business Case (OBC)**
- **February 2009 – Assessment of OBC by PUK**
- **March 2009 - OBC approved by DfT and PRG (including approval for the full amount of PFI Credits requested - £674.1 m)**

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## Project Funding

- **PFI Credits of £674.1 million (including street lighting and rolled up LTP Maintenance funding)**
- **Council's Highways budgets plus additional £10 million a year**
- **Total spend of over £2 billion over 25 years**

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## Key Project Objectives

- **Step change in the condition of the City's highway**
- **More accessible and welcoming Streetscene**
- **Improved safety**
- **Increased use of public transport**
- **Reduced crime and fear of crime**
- **Reduced vehicle maintenance and fuel costs**
- **Reduced level of 3<sup>rd</sup> party claims**

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## Project Scope (1)

- **Integrated, city-wide, fence-to-fence, whole network approach**
- **Rehabilitation of the highway network within the first 7 years of the contract**
- **Maintenance of the highway network for the remaining 18 years of the contract**

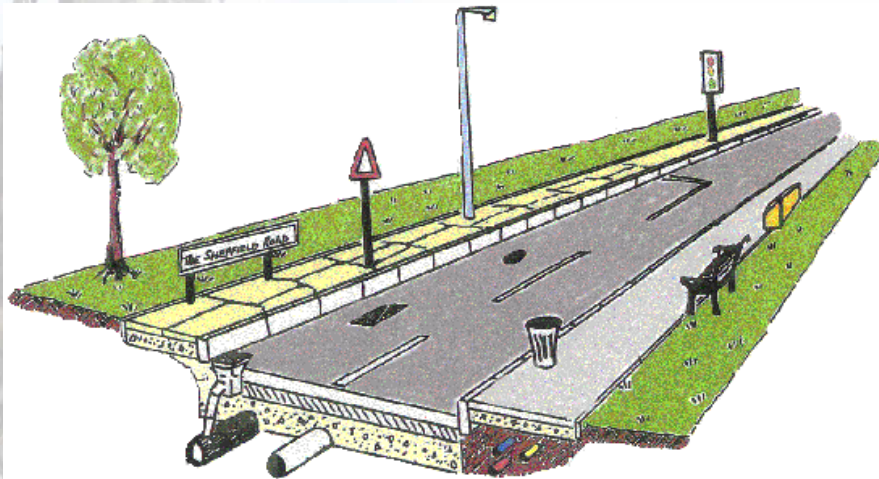
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## Project Scope (2)

- **Covers all highway assets including:**
  - Carriageways, Footways, Structures, Streetlights etc
- **Covers soft services including:**
  - Street Cleaning, Horticulture/arboriculture, Winter Maintenance etc



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## Not Included in the Scope

- Retained functions will include most statutory and regulatory duties, especially under the Traffic Management Act
- Grounds maintenance and cleaning of non-highway land

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## Process to Date (4)

- April 2009 - Gateway Review 2 completed
- April 2009 - OJEU issued
- April 2009 – Bidders Conference Held
- Development of Project Documentation
  - Project Agreement
  - Output Specification
  - Payment Mechanism

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# Project Agreement

- **Based upon**
  - Work undertaken by SCC for Street Lighting Project (based upon Model Street Lighting Contract)
  - Position reached by SCC on other PFI/PPP deals
- **Consistent, wherever possible, with SoPC4**
- **Covers**
  - Pre-commencement period
  - Programmes and Method Statements
  - Supervening events
  - Change
  - Warranties and Indemnities
  - Employment matters
  - Handback
  - Dispute resolution
  - Termination

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# Output Specification

- **Started with the Highways Procurement Pack (HPP) Output Specification**
- **Sets out Performance Requirements**
- **For each Performance Requirement the following information is also given:**
  - Rectification Period
  - Repeat Period
  - Grace Period
  - Adjustment Type
- **SCC Output Specification divided into 10 Sections covering specific assets or services**

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# Payment Mechanism

- **Annual Unitary Charge starts at 65% and increases to 100% as Milestones are achieved**
- **Monthly Payment comprises:**
  - Monthly Unitary Charge
  - Energy payment
  - Accruals Adjustment
  - Performance Adjustments
  - Carbon Adjustment
  - Traffic Management Adjustment
  - Non Core Services

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# Milestones

- **Carriageway Condition Index (for each hierarchy and Community Assembly Area)**
- **Footway Condition Index (for each hierarchy and Community Assembly Area)**
- **Bridge Stock Condition Index (Both Average and Critical for Bridges, Subways and Retaining Walls)**
- **Replacement of Non Compliant Street Lighting Units**
- **Replacement of Traffic Signal Installations > 25 years old**

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# Carriageway Condition Index (1)

- Condition data obtained through UKPMS accredited machine and visual Surveys (SCANNER, CVI and SCRIM) together with a bespoke patching survey
- Data processed using UKPMS with modified rule sets and parameters to produce defect ratings
- Defect ratings are then combined and weighted using a bespoke piece of software called Scheme Engineer
- Scheme Engineer produces Sub Section and Section Condition Indices and ultimately CCIs for each hierarchy and Community Assembly Area.

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## CCI (2) – Relationship Between Defects and Indexes

Carriageway Condition Index	CCI by Network Hierarchy and Community Assembly Area (For Primary and Secondary Road Networks)						
	Carriageway Structural CI			Carriageway Surface CI		Carriageway Aesthetic CI	
Section Condition Index	Struc SSCI	Edge SSCI	Ride SSCI	Surf SSCI	Scrim SSCI	Ride SSCI	Patch SSCI
Contributing Defects	Wheel Track Cracking	Edge	LPV 3	Wearing Course	SCRIM	LPV3	Patch
	Settlement		LPV 10	Surface Deterioration		LPV10	
	Rutting						
	Wearing Course						

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## Footway Condition Index

- Condition surveys carried out using the UKPMS Footway Network Survey (FNS)
- FCI calculated using a similar approach to the CCI but with the defect types being Structurally, Functionally and Aesthetically Impaired

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## Process to Date (5)

- **May 2009 - Potential Bidders submitted PQQs which were then evaluated**
- **July 2009 - Shortlisted three Bidders:**
  - **Amey** – bidding as a single organisation, supported by Amey Local Government Limited
  - **Carillion** – lead organisation, forming a consortium with Mouchel Ltd
  - **Colas** – lead organisation, forming a consortium with Scott Wilson, Colas SA and Bank of Scotland

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## Process to Date (6)

- **Dispensed with Invitation to Submit Outline Solution (ISOS) Stage and moved straight into Invitation to Submit Detailed Solution (ISDS) Stage**
- **Commenced dialogue meetings in September 2009**
  - Fortnightly, 1 full day per Bidder
  - 10 rounds of meetings held

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# Summary of Indicative Project Timetable

<b>Commence Dialogue Process</b>	<b>July 2009</b>
<b>Detailed Solutions Submitted</b>	<b>February 2010</b>
<b>Approval of Shortlisted Bidders</b>	<b>June 2010</b>
<b>Refined Solutions Submitted</b>	<b>September 2010</b>
<b>Final Tenders Submitted</b>	<b>February 2011</b>
<b>Preferred Bidder Appointed</b>	<b>March 2011</b>
<b>Commercial Close</b>	<b>June 2011</b>
<b>Financial Close</b>	<b>July 2011</b>
<b>Contract Starts</b>	<b>August 2011</b>

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## Lessons Learned (1)

- **Project Director – key appointment**
- **Experienced, full-time in-house Project Team**
- **Experienced external advisors**
- **Level of in-house technical resource required**
- **Data difficulties**

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## Lessons Learned (2)

- **Financial resources required**
- **Additional costs relating to accrued items**
- **Clear Objectives**
- **Early decision on scope and keep it simple**
- **Broad based Political support**

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## Contact Details

**For further details and information about the  
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