



Department for Transport

HS1 Asset Management and Station Periodic Review

Review Report



gleeds^G



steer

July 2019

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Executive summary

Gutteridge Haskins and Davey Ltd (GHD) supported by Gleeds Cost Management Limited, Steer Ltd and Initiate Consulting Limited has been engaged by the Department for Transport (DfT) to undertake a review of the High Speed One (HS1) Control Period Three (CP3) submission for stations assets, incorporating three phases: Familiarisation, Review and CP3 Submission.

The structure of the Asset Management System is unclear and HS1 should consider providing a definitive guide to how the documents that they are producing interact with each other to meet the requirements of the Lease.

The following recommendations are made in the body of this report and are aimed at supporting HS1 in achieving their aspiration to deliver world leading asset management.

No.	Recommendation
01	HS1 to clearly specify how asset condition has been used to inform the need for asset renewal and therefore the LTC.
02	In line with the HS1 stated purposes of the SASs, it is recommended that the current approaches to be taken for renewal of asset classes are made clear in the SASs.
03	HS1 to explain how the source for criticality stated in the SASs has been applied.
04	HS1 to explain in the SAS the exclusion of the 'Passenger Comfort' business attribute and the movement of its weighting to 'Cost', and the nature of the agreement achieved with stakeholders.
05	HS1 to explain in the SAS the rationale behind the sub-division of the 'Safety' and 'Cost' business attributes used for determining asset criticality together with the weighting assignments, and the nature of the agreement achieved with stakeholders.
06	HS1 to explain in the SASs how the age of the assets is connected into the strategy and renewal decision making.
07	HS1 to use consistent terminology throughout its suite of SAS documents and rectify inconsistencies between the documentation defining their asset management intentions.
08	HS1 to validate and verify the content of Appendix 9.5 <i>Asset Inventory and Age</i> in all SAS documents and the inventory and age in the LCC models and update accordingly.
09	HS1 to consider streamlining SAS documentation to avoid duplication of content.
10	HS1 to complete Sections 7.2 EAM Initiatives, 7.3 Implementation Plan and 9.2 Related Standards, Legislation and Regulations or make it explicit that nothing applies in these sections. Where completion is required, a note should be added within the document to highlight the status of completion and indicate an expected completion date.
11	HS1 to clearly describe the intent of the asset management capability maturity roadmap (Appendix E), and identify the progress to-date.

No.	Recommendation
12	DfT should actively monitor progress made by HS1 against their CP3 proposals to provide assurance that HS1 are establishing the capabilities identified that will lead to a more informed renewal plan and associated LTC in CP4.
13	HS1 to prepare a Cost Efficiency Plan and submit it for review by the Reviewer, such that recommendations may be made to the DfT before publication of the Final Consultation document at the end of May 2019.
14	DfT to require HS1 to provide a copy of the Oxera Enhancements Framework to the Reviewer such that a review can be undertaken and any findings advised to DfT before publication of the Final Consultation document at the end of May 2019.
15	HS1 to review the structure of the Asset Management System and provide a definitive guide demonstrating the interaction of documents and how they combine to meet the requirements of the Lease and HS1's aspiration to achieve 'world leading asset management'.
16	HS1 to update the LCC and LTC models to correct current shortcomings/known actions and submit models for an additional review by the Reviewer such that any findings can be advised to DfT before publication of the Final Consultation document at the end of May 2019.
17	HS1 and DfT to clearly define the asset health handback provisions, and the DfT to actively manage the review of asset health during regular quarterly renewal decisions.
18	HS1 to modify the LCC models to encapsulate all assets over a rolling 40-year period to provide foresight of renewal costs of assets beyond the existing Lease period.
19	HS1 to clarify how longer life assets are considered in the uncertainty study report.
20	DfT to consult with TOCs regarding funding mechanisms and models for long life assets.
21	DfT to commission a study to assess the full financial impacts of shifting to a rolling renewals model.
22	HS1 and DfT to agree a Change Management Process or provide documented evidence of a Change Management Process to the Reviewer if one exists such that a review can be undertaken and any findings be advised to the DfT before publication of the Final Consultation document at the end of May 2019.
23	HS1 to produce a change management process document for how elements that effect the LTC are managed.

No.	Recommendation
24	<p>DfT should seek stakeholder involvement on the following questions before finalising its determination:</p> <ul style="list-style-type: none"> • What funding mechanisms should be employed for the funding of long-term assets? E.g. St Pancras station roof. • What forward funding period should be considered for asset renewal to capture long life assets where renewals is expected beyond 2060? • HS1 have determined that they will not pursue seeking the Thameslink SFO at St Pancras to contribute to the LTC until the current franchise changes in 2021, at the earliest. How do TOCs think they are being specifically impacted on whilst the Thameslink SFO does not contribute? • HS1 have determined that they will not move away from the existing splitting of LTC costs between TOCs away from station space and share of vehicle departures. Do TOCs think that this specifically impacts on their share of the LTC contribution?
25	<p>HS1 to provide documented evidence of their approach to project delivery to the Reviewer such that a review can be undertaken and any findings be advised to the DfT before publication of the Final Consultation document at the end of May 2019.</p>
26	<p>HS1 to provide a summary of the scope and timing of the renewals planned for CP3 to the Reviewer so that a review can be undertaken and any findings advised to the DfT before publication of the Final Consultation document at the end of May 2019.</p>
27	<p>HS1 and DfT to consider through the CP3 process the appropriate terms of reporting and establish the requirement.</p>
28	<p>HS1 should document how adjustments and transfers to Qx and LTC will be managed and recorded.</p>
29	<p>HS1 to log historical and future changes during CP3.</p>
30	<p>HS1 to document lessons learned such that what worked well, what was improved and what still needs attention from experience through CP2 is considered in an appropriate manner to provide an enduring and usable source of learning.</p>
31	<p>HS1 to consider actions that can be implemented immediately for CP3 to improve the overall submission process (e.g. optionality).</p>

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1. Introduction

1.1 Purpose of this report

Gutteridge Haskins and Davey Ltd (GHD) supported by Gleeds Cost Management Limited (Gleeds), Steer Ltd (Steer) and Initiate Consulting Ltd (Initiate) (collectively, the 'Reviewer') have been engaged by the Department for Transport (DfT) to undertake a review of the High Speed One (HS1) Control Period Three (CP3) submission, and advise if the submission documentation meets the requirements of the HS1 Lease Agreement.

This Draft LCR Review forms the second of three reports to be produced.

The Familiarisation Report outlined the Reviewer's initial findings following an assessment of HS1's development throughout Control Period 2 of their Asset Management System and Project Management approach to the delivery of stations renewals works, including progress against the recommendations and actions from the last Control Period Review.

The Familiarisation Report summarised findings and provided a number of recommendations where further investigation was recommended throughout the 'Review Phase' in advance of the formal submission by HS1 in June 2019.

This second report, the Draft LCR Review, provides recommendations arising from a full review of the Draft CP3 documentation produced, including the SAS and LCRs, the treatment of works beyond the 50-year life cycle, the impact of moving to a 40-year rolling programme and takes into account emerging future railway considerations. This report also considers the approach to change management.

The third report will focus on compliance with the HS1 Lease, including considering the robustness of the financial models supporting the renewals programme and the capture of lessons learned, and will develop recommendations for CP3 in line with the HS1 Lease and industry good practice.

2. Abbreviations

AAMS	Annual Asset Management Statement
AMS	Asset Management Strategy
CP	Control Period
DfT	Department for Transport
LCC	Life Cycle Cost
LCR	Life Cycle Report
LTC	Long Term Charge
NR(HS)	Network Rail (High Speed)
ORR	Office of Rail and Road
Qx	Qualifying Expenditure
SAMP	Strategic Asset Management Plan
SAS	(Station) Specific Asset Strategies

3. Recommended DfT feedback to HS1

3.1 Draft Specific Asset Strategies and Strategic Asset Management Plan

The Reviewer has been requested to undertake a full review of the Specific Asset Strategies (SASs) for the stations. HS1's new asset management system document suite identifies the Strategic Asset Management Plan (SAMP) for the stations as informing the SASs. The Reviewer has therefore also considered relevant sections from the SAMP in the review of the SAS.

3.1.1 Asset management principles

HS1 is adopting the principles of the ISO 55000 series for asset management in the artefacts being created, such as the SAMP and SASs. It is expected that these will contribute to a better understanding of the station assets and enable more informed renewal intervention planning when married with an operating asset management system.

HS1 highlight many improvements they intend to make to their asset management maturity and capability, with improvements to asset information to facilitate decision-making dominating the station asset management objectives.

HS1 have identified that there are currently gaps in the line of sight from asset management strategy through to the LTC. Further improvements are required to ensure that clear strategies for station specific assets can be readily translated into appropriate renewal plans.

The asset management artefacts created by HS1 are not yet mature enough to inform the LTC for CP3 by providing the line of sight from policy, objectives and strategy through to renewal plans and the LTC.

3.1.2 Overall SAS document suite structure

The draft station SASs prepared by HS1 for CP3 are significantly different from those submitted in CP2.

In CP2, the SASs were presented as a minimalistic section for each station within the overall Asset Management Strategy, International Stations.

For CP3, HS1 have produced a SAS for groupings of station elements, resulting in six separate SAS documents. All the Station Elements listed in the HS1 Lease Annex 1 (to Schedule 10) are included within these asset groupings.

While there are a few elements of the SASs that are station specific (such as the charts of criticality ranking for assets classes, the planned renewal spend and inventory/estimated life) the majority of the document content in relation to renewals is non-station specific.

3.1.3 Strategy linkage to LTC

HS1 make it clear that there is no link between the current version of the SASs and the CP3 Long Term Charge (LTC). Concepts described in the strategic documentation, such as asset criticality, are 'influences' only.

HS1's overarching 'Stations Long Term Charge Review for Control Period 3' document states:

"The current SASs describe what we currently do or plan to do; inspection and maintenance interventions are from supply chain maintenance system information and renewals are from the LCC model. We will continue to develop the SASs in CP3 to enhance our decision-making for CP4." (Section 8.3 Asset Management System, page 35).

This message is reinforced elsewhere in the same document; for example that the SASs “...describe HS1 station asset management “as is” and influence, rather than provide direct inputs into, the Life Cycle Cost modelling.” (Section 3.3.2. Workstreams, page 15) and that the SASs “... do not drive the interventions in the models.” (Section 8.3. Asset Management System, page 36).

HS1 have made it clear in the SAMP that the asset management criticality has not been used explicitly to inform the cost models.

“Note; The Regulated Long Term Charge Models are not directly driven by the Asset Management Criticality and Long Term Charge Model calculations have not been modified line by line to reflect the criticality scoring.” (SAMP, section 2.2.1 Asset Criticality developed within Control Period 2 (from 2015 to 2020), page 25)

The Reviewer was unable to find evidence of direct inputs from the SASs into the Life Cycle Cost models (Asset Inventory and Age being matched with the models, rather than the SASs informing their derivation).

HS1’s asset management framework as described in the ‘Stations Long Term Charge Review for Control Period 3’ document (for example Figure 4, page 25 and Figure 5, page 33) clearly shows the role of the SAS in informing production of the Renewals Plan from the SASs and the development of the LTC from the Renewals Plan. There is currently a disconnect between the strategy (SAMP and SASs), asset management objectives and the Renewal Plans, such that no ‘line-of-sight’ can be followed from the asset management strategy through to the station renewals and LTC proposed for CP3. (‘Line-of-sight’ being a fundamental principle of good asset management as described by the ISO 55000 series).

In this context, the SAMP and SASs play no role that can be evidenced in the determination of the LTC.

3.1.4 Use of asset condition

The SASs reference the application of asset condition in relation to renewal planning, for example:

“In 2015 a condition survey was undertaken by Arcadis with the development of a ‘triggers model’ that identified key condition measures linked to renewals requirements. During 2018 and 2019 Pell Frischmann delivered an independent assurance review of the renewals plans informed by the recorded condition of the stations assets and typical services lives of each asset group.” (SAMP, section 2.4.1 Asset degradation within Control Period 2 (from 2015 to 2020))

and;

“HS1 recognise the significance of assessing asset condition and has generated a framework to allow consistent measurement of deterioration. This information is held as a record for each of the four stations. Assessments have occurred during each of the 5-year control periods (CP1 and CP2) and HS1 intend to take measurements every five years until the end of the concession.” (SASs, section 2.4 Asset Condition)

and;

“The stations renewal plans set out the proposed volumes of renewals required based on our understanding of the asset condition and expected degradation.” (SAMP, section 2.9 Consideration of Intervention Options, page 47).

Rather confusingly, the SASs identify one of the priority asset information maturity enhancement areas as “Collect and analyse asset condition...” (SASs, Executive Summary)

The Reviewer has found no evidence to support the use of asset condition in determination of the CP3 station renewal costs.

Recommendation 01: HS1 to clearly specify how asset condition has been used to inform the need for asset renewal and therefore the LTC.

3.1.5 SAS review detail

The Reviewer has conducted a review of the draft SAS documents, based on the purpose, content and level of maturity of the SAS as indicated by HS1. This review has identified the following points that the Reviewer considers material to observe (from a SAS improvement perspective) and for the DfT to consider feeding back to HS1.

1. SAS purpose

It is unclear as to how the SASs satisfy the stated purpose.

The SASs are described in Section '1.1. Purpose and Function' as containing proposed maintenance and renewal approaches for the HS1 stations. However, there is no evidence within the SASs of the renewal approaches that are to be adopted.

It is therefore unclear as to how NR(HS) (or Mitie) / HS1 are to develop their 'NRHS Tactical SAS' / 'HS1 Renewals Plan' to deliver these renewal approaches.

Recommendation 02: In line with the HS1 stated purposes of the SASs, it is recommended that the current approaches to be taken for renewal of asset classes are made clear in the SASs.

2. Asset Criticality

The source for criticality used in the SASs is stated in Section 9.3 Sources as the EC Harris spreadsheet 'HS1 Asset Hierarchy Criticality Degradation_Final Draft_29 May 15'.

There is a difference between the criticality assessment categories used in the EC Harris spreadsheet and the Business Attributes in the SASs, and the EC Harris assessment does not apply likelihood of failure.

Recommendation 03: HS1 to explain how the source for criticality stated in the SASs has been applied.

3. Asset criticality business attributes and their weightings

There are unexplained differences between the SAMP and SASs for 'Business Attributes' and their weightings.

The SAMP sets out the 'business attributes' and the associated level 1 asset management objectives and importance weightings that have been developed and agreed with stakeholders.

The business attribute of 'Passenger Comfort' is not applied in the SASs and the weighting is redistributed to 'Cost' in the SASs, with no explanation provided.

Recommendation 04: HS1 to explain in the SAS the exclusion of the 'Passenger Comfort' business attribute and the movement of its weighting to 'Cost', and the nature of the agreement achieved with stakeholders.

The SASs sub-divide the business attributes of 'Safety' and 'Cost' as follows:

- 'Safety', with a weighting of 25%, becomes made up of
 - 'HS&E' weighted at 12.5% and
 - 'Reputation' weighted at 12.5%.
- 'Cost', with a SAS weighting of 20%, becomes made up of
 - 'Qx' weighted at 10% and
 - 'LTC' weighted at 10%.

The rationale behind the sub-division of Safety and Cost and weighting distribution is not provided. It is therefore not clear if the stakeholders have agreed these sub-divisions and weightings.

Recommendation 05: HS1 to explain in the SAS the rationale behind the sub-division of the 'Safety' and 'Cost' business attributes used for determining asset criticality together with the weighting assignments, and the nature of the agreement achieved with stakeholders.

4. Asset age

Section 2.3 Asset Inventory & Age in the SAS appears disconnected from the rest of the document.

Concepts relating to the use of age related information for assets, and a number of terms relating to asset age information, are introduced. For example, 'remaining asset life'/'remaining life', 'end of life' and 'operational service duration'.

No insight is provided into the asset group based on age, nor is it clear how age information is being used to inform renewals decisions. It is further noted that these terms do not appear outside of this document sub-section.

The years in which each station first became active is stated and a general caveat is given that "*Some assets and services were in beneficial use up to 2 years prior to these dates.*", but there is no indication to which of the assets this references.

Recommendation 06: HS1 to explain in the SASs how the age of the assets is connected into the strategy and renewal decision making.

5. Inconsistencies between the SAMP and SAS

There are a number of inconsistencies between the information stated in the SAMP and that given in the SASs.

Notable inconsistencies identified include:

- a. The SAMP states that the Services SAS explores the changes to the operational context, and degradation of lifts and conveyor installations, however there is no such coverage provided in the Services SAS. (SAMP, Section 2.8.5 Existing approach to Services, page 46)
- b. The SAS documents state "*The SAS documents are fed by the HS1 Asset Management Policy, Strategic Plan and Objectives, with regular communication and feedback with the Lifecycle cost.*" (SASs, Section 1.3 Alignment). This is inconsistent with statements made in both the SAMP and 'Stations Long Term Charge Review for Control Period 3' document where it is made clear that the SASs do not inform the life cycle costs.
- c. The SASs are expected to be aligned with the Asset Management Objectives (AMOs), however the list of Level 2 AMOs given in the SASs (Section 1.3.2 HS1 Asset Management Objectives), is significantly different from those listed in the SAMP (Section 2.1 Asset Management Objectives, pages 21-24).

Recommendation 07: HS1 to use consistent terminology throughout its suite of SAS documents and rectify inconsistencies between the documentation defining their asset management intentions.

6. Inconsistencies with the LCC models

There is inconsistency between Appendix 9.5 Asset Inventory and Age in the SAS documents and the LCC models.

Sample sources: Internal Finishes SAS Section 9.5.2 vs. LCC Model - Stratford CP3 v3 no contingency 08 Nov 2018 (Elemental Analysis Tab – Column J – Cycle Summary)

Inconsistency findings from sampling:

- a. 3B.03 Terrazzo – 50-year renewal – inconsistent with model that states a 40-year renewal cycle.
- b. 3B.05 Vinyl fixed with adhesive to cement sand screed – 37-year life – inconsistent with model that states an 18-year renewal cycle.
- c. 3C2.03 Suspended ceilings Metal tile suspended ceiling, exposed suspension grid, acoustic insulation – 30-year renewal – inconsistent with model that states a 40-year cycle.
- d. Items without a specific asset number are missing from the model. e.g. 3.3.1.1 Stair finishes – 10 stairs – 15-year renewals are not listed in the LCC.
- e. Only Stratford - Common (All) Ground assets are shown in the SAS. There are also Mezzanine level, domestic and international areas and assets listed, but these assets and their quantities are not listed in the SAS.

Recommendation 08: HS1 to validate and verify the content of Appendix 9.5 *Asset Inventory and Age* in all SAS documents and the inventory and age in the LCC models and update accordingly.

7. Duplication

A substantial number of SAS document sections are essentially duplicated across each SAS. It is unclear how the SASs will be ultimately be applied operationally by HS1, however streamlining the SAS document set should be considered unless there are good operational reasons to retain this duplication.

Recommendation 09: HS1 to consider streamlining SAS documentation to avoid duplication of content.

8. Incomplete document sections

Section 7.2 EAM Initiatives, 7.3 Implementation Plan and 9.2 Related Standards, Legislation and Regulations appear to be incomplete.

Recommendation 10: HS1 to complete Sections 7.2 EAM Initiatives, 7.3 Implementation Plan and 9.2 Related Standards, Legislation and Regulations or make it explicit that nothing applies in these sections. Where completion is required, a note should be added within the document to highlight the status of completion and indicate an expected completion date.

9. The 'Strategy' includes maintenance

The HS1 Lease, Annex 1 (to Schedule 10) requires the asset management strategy to only consider renewals and replacement and that maintenance and repair activities are to be excluded. The SAS (and SAMP) include maintenance activities and therefore do not meet this requirement.

It is noted that including consideration of the asset maintenance in conjunction with renewal would be considered part of good asset management practice; however, it is also noted that there is no evidence of HS1 currently considering the interaction between maintenance and renewal decision making, although there is an HS1 intent to achieve this in the future.

3.1.6 Strategic Asset Management Plan

The Reviewer has conducted a review of the draft SAMP, based on the purpose, content and level of maturity of the SAMP as indicated by HS1. This review has identified the following points that the Reviewer considers material to observe (from a SAMP improvement perspective) and for the DfT to consider feeding back to HS1.

1. Asset management capability maturity roadmap

HS1 have produced an extensive list of asset management capability improvements, which are listed in the SAMP, Appendix E – HS1 Asset Management Capability Maturity Roadmap (pages 86-112).

It is not clear from the document if HS1 intends to adopt this roadmap, and if so, how and when this is to be achieved.

It is also not clear if HS1 has made any progress against the items identified in the roadmap.

Recommendation 11: HS1 to clearly describe the intent of the asset management capability maturity roadmap (Appendix E), and identify the progress to-date.

2. CP3 asset management maturity

HS1 have identified improvement plans for their asset management maturity improvement in CP3 (SAMP Section 4.6 Asset Management Maturity Improvements Planned for CP3, page 64 and Section 4.7 Asset Management Improvement Roadmap, page 68).

HS1 have also identified improvements in decision-making capability throughout the Level 2 asset management objectives.

Recommendation 12: DfT should actively monitor progress made by HS1 against their CP3 proposals to provide assurance that HS1 are establishing the capabilities identified that will lead to a more informed renewal plan and associated LTC in CP4.

3.2 Cost Efficiency Plan

The Reviewer has not been provided with a HS1 Cost Efficiency Plan. A review of the Draft Consultation Report (28 February 2019) considers the following HS1 statements regarding cost efficiency:

- *“We will challenge NRHS to outperform their current plans for efficiencies over the next 5 years.”* (Page 2, left hand column, bullet 1)
- *“Removal of the 0.6% p.a. compounding efficiency overlay...”* (Page 6, left hand column, bullet 1) *[that was adopted in CP2]*
- *“...and be hungry about chasing future efficiencies...”* (Page 26, left hand column, paragraph 2)

Most UK regulators expect the organisations they are regulating to adopt a continuous improvement plan to deliver their customers the services required at reducing cost (cost efficiencies). Whilst the first and third points above seem to show a desire to deliver cost efficiencies, HS1’s action in removing the annual efficiency cited in the second point above is contrary to that ethos.

Recommendation 13: HS1 to prepare a Cost Efficiency Plan and submit it for review by the Reviewer, such that recommendations may be made to the DfT before publication of the Final Consultation document at the end of May 2019.

3.3 Enhancements framework

The Reviewer understands from HS1 that, historically, where a TOC(s) wanted a station enhancement, it could be undertaken through (simple) commercial agreements between the relevant parties. Further, we understand from HS1 that there have been no instances of requested enhancement schemes not proceeding as a result of not being able to agree appropriate commercial arrangements between the relevant parties

Page 10 of the Draft Consultation Report (28 February 2019) provides a short commentary about the four stations on the HS1 route and highlights potential passenger congestion issues at the following stations:

- St. Pancras – driven by the increased frequency of Thameslink services
- Ebbsfleet – driven by third party regeneration/property development which may be expected to result in increased passenger numbers using the station

With the prospect of needing to undertake enhancements in the future, such as the two examples cited above, the establishment of an Enhancements Framework would allow all parties (HS1, TOCs, DfT and ORR) to understand their responsibilities in relation to the identification, delivery and funding of such schemes.

The Reviewer has not been provided with any proposals for an Enhancements Framework despite HS1 advising that a report on an Enhancements Framework prepared by Oxera exists.

Recommendation 14: DfT to require HS1 to provide a copy of the Oxera Enhancements Framework to the Reviewer such that a review can be undertaken and any findings advised to DfT before publication of the Final Consultation document at the end of May 2019.

3.4 Benchmarking

The Reviewer has been provided with evidence of benchmarking of renewals unit rates and “on costs” (indirect costs) in the inputs to the CP3 LCC models undertaken by Pell Frischmann and Network Infrastructure Consultants.

3.4.1 Renewal Unit Rates

A comparison of the unit rates used in the LCC models with the Reviewer’s own database and other published sources of rates information has been undertaken. Very few outliers have been found in the LCC rates. Accordingly, the Reviewer considers that the rates used are reasonable.

3.4.2 On Costs (Indirect Costs)

The total of “standard on costs” used in the LCC models is circa 72%. This has been compared to the benchmarked on cost ranges adopted by Network Rail for their CP6 renewals which lie within the range 36%-75% (mid-point 55.5%). ORR’s CP6 Final Determination for Network Rail made a 10.7% allowance for risk over a £21bn maintenance and renewals portfolio. (55.5% + 10.7% = 66.2%)

On the basis that HS1 have not made any separate allowances for contingency and risk the Reviewer considers that the on costs applied are reasonable.

3.5 Overall Documentation Structure of the HS1 Asset Management System

The Asset Management Framework and Document Hierarchy are shown in most of the documents provided for review. Specific examples are Figure 4 in Section 5 and Figure 5 in

Section 8.3 of the Stations LTC Review; Figure 9 in Section 3.1 in the SAMP; Section 1.3 in the SSASs; and Section 2.2.2 in the LCRs.

The LCRs also include different diagrams of HS1's Asset Management Framework – see Figure A in Section 1.1 and Figure B in Section 2.2.1 of the CP3 Stratford LCR. These diagrams do not align with the other versions and reference different documents. For example, the Framework diagram referred to in the previous paragraph do not include the LCRs.

Other documents are referred to in the consultation documents that are not linked to the Asset Management Framework. For example, Section 4.4.2 of the Stations LTC refers to an 'Annual Stations Portfolio Funding Paper' and other quarterly updates. The same section also refers to the HS1 project process which is not shown on the Framework. The SAMP contains several references to Asset Management Annual Statements (AMAS) and show them linked to Asset Management Objectives in Table 9 in Section 2.1.1, yet these documents are not referenced in the Asset Management Framework.

These inconsistencies have made it difficult to understand the overall documentation structure and the status of the documents provided for consultation. We understand that some of these documents are regulatory requirements (e.g. LCRs), however there is considerable overlap of information in the documents that ranges from simple duplication to conflicting information provided in the different documents. This may be symptomatic of the state of maturity of development of HS1's approach and Asset Management System. The confusion over the hierarchy and status of documentation provided has hence made the review of documentation challenging.

Recommendation 15: HS1 to review the structure of the Asset Management System and provide a definitive guide demonstrating the interaction of documents and how they combine to meet the requirements of the Lease and HS1's aspiration to achieve 'world leading asset management'.

4. Recommendations to DfT on draft LCR and LTCs

4.1 Draft LCR

The Reviewer considers that the Life Cycle Reports for the four stations (namely, St. Pancras, Stratford, Ashford and Ebbsfleet) require additional information to substantiate the claim that each LCR contains information that addresses the relevant clauses in Schedule 10. It is noted that in most instances it is not possible to form an opinion on whether or not HS1 is meeting the requirements of the Schedule 10 clauses as the text in the LCR is either:

- Not directly pertaining to the requirements of a clause;
- Appears to be for another station;
- Appears to be for CP1 reviews ahead of CP2; or,
- Is insufficient such that it is uncertain as to whether or not the requirement is being met.

Where the Reviewer considers that the information meets the evidentiary requirements for a clause we have indicated that the text is "compliant"; correspondingly, there are instances where we consider the text to be "non-compliant". There are instances where further information is required, or where information for one or more stations appears to be appropriate, but not for all four stations. The need for further information for these clauses has been noted.

4.2 Draft LTCs

Four separate LCC Excel models (one for each station) and a single LTC Excel model were provided for review. The models are dated November 2018, however we have been assured by HS1 that no material changes were made before publication of the Draft Consultation Report (28 February 2019).

The LCC models cover a 50-year life cycle. The “Cover” and “Notes” sheets in the LCC models contain misleading and incorrect data, for example, references to an “Assumptions” sheet that does not exist, and incorrectly stating the pricing year as 2013 rather than 2018.

Inputs to the LCC models include material quantities, unit rates and on costs. (Unit rates and on costs are discussed in section 3.4). The models do not contain any provision for contingency or risk.

The Reviewer has not been provided with any assurance regarding material quantities. HS1 have advised that the material quantities have not been changed or assured since they were first created in c2010.

Evidence of the outputs from the LCC models being identical inputs into the LTC model has been sighted.

The LTC models cover the 40-year period 2020/21 to 2059/60. The annuity calculation is set at a level such that the escrow balance in 2059/60 becomes zero. The annual charge to TOCs during a Control Period is set to be the average cost of the annual LTC calculation over a Control Period, which is then shared out to the access beneficiaries in proportion to pre-agreed parameters.

The LTC model indicates that the Financial Assumptions (eg. inflation, escrow amount available for long-term investment and cost of borrowing) need to be aligned with the route assumptions.

Recommendation 16: HS1 to update the LCC and LTC models to correct current shortcomings/known actions and submit models for an additional review by the Reviewer such that any findings can be advised to DfT before publication of the Final Consultation document at the end of May 2019.

5. Recommendations from other DfT specified activities

5.1 Handback condition definitions

5.1.1 Asset Classification Framework (2016)

Section 2 of Schedule 10 of the HS1 Lease requires that HS1 ensure that each station shall be in *good and substantial repair and condition during the whole of the life cycle period*.

The definition of *good and substantial repair and condition* was the subject of a report commissioned by HS1 titled ‘HS1 International Stations, Asset Baseline Phase 2 Final Report’ dated July 2016.

The methodology proposed resulted in an asset health score of A – ‘Good’ to E – ‘Failed’ for each of the assets identified on the asset registers at each of the four stations. Section 5 Target Asset Health Handback State of this report states:

Once the Asset Health ratings were assessed for the assets and systems at the four International Stations Arcadis then facilitated a workshop with DfT and HS1 Ltd on 18th April 2016 in order to agree a Target Asset Health Handback State for each asset/system.

It was agreed that all assets/systems should have an Asset Health rating of either Good (Asset Health rating A) or Satisfactory (Asset Health rating B), as detailed in section 4.1 of this report, at the Handback stage of the Concession.

Arcadis reviewed this with DfT and HS1 Ltd and agreed the appropriate rating for each specific asset/system, considering the various factors to determine if an Asset Health rating of A or B is appropriate for the relevant asset/system, e.g. if there was a statutory compliance requirement on the asset/system.

The agreed handback state for these assets is summarised in Figure 1 below, with supporting asset information contained in the Asset Health Framework spreadsheets that were developed as part of this work.

Figure 1 – Asset Health Handback Rating for Stations

5.1.1 Ashford International Station

Asset Health Handback Rating	A	B	C	D	E
No. of assets	34	30	0	0	0

Details of the Asset Health Handback ratings for assets/systems/elements can be found in the Asset Health Framework spreadsheet for Ashford International Station

5.1.2 Ebbsfleet Station

Asset Health Handback Rating	A	B	C	D	E
No. of assets	36	29	0	0	0

Details of the Asset Health Handback ratings for assets/systems/elements can be found in the Asset Health Framework spreadsheet for Ebbsfleet Station

5.1.3 Stratford International Station

Asset Health Handback Rating	A	B	C	D	E
No. of assets	33	26	0	0	0

Details of the Asset Health Handback ratings for assets/systems/elements can be found in the Asset Health Framework spreadsheet for Stratford International Station

5.1.4 St Pancras Station

Asset Health Handback Rating	A	B	C	D	E
No. of assets	37	33	0	0	0

Details of the Asset Health Handback ratings for assets/systems/elements can be found in the Asset Health Framework spreadsheet for St Pancras Station

The above proposed handback condition position was not ratified between HS1 and DfT, so this remains only a proposal that was not progressed.

No further progress has occurred on handback condition or definitions since this report was issued in 2016. This ambiguity may lead to disagreement between the parties at the end of the concession agreement, however with 20 years remaining on the concession agreement, this is not an item that is being actively progressed.

The Reviewer understands that HS1’s position at the end of the term, will be one whereby, if asset condition and asset performance is not challenged by DfT through the regular quarterly renewal decisions and AMAS submissions, the condition of assets will be considered to meet the level of ‘good and substantial repair and condition’.

Recommendation 17: HS1 and DfT to clearly define the asset health handback provisions, and the DfT to actively manage the review of asset health during regular quarterly renewal decisions.

5.2 Work beyond 50-year cycle and impact of 40-year rolling programme

5.2.1 Life cycle period

The Life Cycle Period is defined in the HS1 Lease as being the period of 50 years commencing on 1 April 2011.

HS1 have developed a life cycle cost model for each station that runs for 50 years, in line with the Life Cycle Period. This is a fixed period model, with 40 years remaining from CP3 to CP10.

Intuitively, moving to a 40-year rolling model would enable future renewals activities beyond 2059/60 to be considered by the LTC model, and enable collection of an annuity that should cover the renewal of these assets. This is preferable from a sustainability perspective, enabling the renewal of all assets contained in the model to be funded. The static '50 year model' includes costs through to 2059/60 but is limited in that it does not consider asset renewals from 2060/61 onwards. It is therefore expected, that from 2020 onwards, if the static 50-year model remains, future renewals beyond 2060 will not be fully funded.

The Life Cycle Cost (LCC) models can be adjusted by start date and duration, allowing assessment of a '40 year rolling model' as compared to the fixed period, however this remains limited to considering only those assets already in the model. The St. Pancras roof, for example, is a known long-life and expensive asset due to its heritage status, is excluded from the model build up, and so this is not able to be switched on for comparison purposes.

Recommendation 18: HS1 to modify the LCC models to encapsulate all assets over a rolling 40-year period to provide foresight of renewal costs of assets beyond the existing Lease period.

5.2.2 Uncertainty Study Report 2019

HS1 commissioned an 'Uncertainty Study Report 2019' by Network Infrastructure Consultants that considered asset replacement costs for the next 50 years for each of the stations through to 2070.

The cost build up for this report does not appear to follow the same approach to the development of the LCC models (using average life values for assets at BCIS level 2/3 rather than an elemental build up), and so direct comparison of asset renewal costs is not considered to be appropriate with the LCC models.

It is not clear whether this report considers longer life assets such as the St Pancras roof, as an average design life of 40 years is used for all assets within the BCIS classification.

Recommendation 19: HS1 to clarify how longer life assets are considered in the uncertainty study report.

5.2.3 Future Railway Considerations

A positive aspect of the uncertainty study is that it considers changes to scope going forward, as it is unlikely in many circumstances that assets will be the same in 40 years to what they are now. For example, in the last 40 years, communications and passenger information systems have moved from print to analogue technologies to digital. Wireless technologies are employed and hand held equipment is a regular feature, all of which was not envisaged in 1980. Future railway changes do not appear to be considered in the LCC models, with only cost escalation included. While it is accepted that in many cases, the additional elements are 'enhancements' and should

be treated differently, changes in industry technology are likely to make many additional features 'standard' in future.

Recommendation 20: DfT to consult with TOCs regarding funding mechanisms and models for long life assets.

Recommendation 21: DfT to commission a study to assess the full financial impacts of shifting to a rolling renewals model.

5.3 Approach to change

The LTC CP3 Review explained that there were new renewal projects identified during CP2 (page 19). These were not included in the CP2 LCC model, but were initiated through the change process. There is some evidence of this occurring in the tables provided in section 4.4 of the Review document, where the variances against the original CP2 model are shown. There is no evidence provided of the specific change process used to manage these new renewal projects, beyond the existing process established between HS1 and DfT to agree funds to be drawn down from the Escrow.

HS1 advised that the DfT is party to this information as it is discussed when they review applications for drawdown from the Escrow account. By implication, the nature of the change is documented during this process. The Reviewer has not received documentation regarding the Escrow process and as such, a review of this has not been undertaken. Further to this, the LTC refers to an 'Annual Stations Portfolio Funding Paper' (section 4.4.3, page 19), which is provided to the DfT annually. This has also not been provided to the Reviewer.

HS1 advised that changes are documented in the Asset Management Annual Statements (AMAS). References to the AMASs elsewhere, such as the process document prepared by Arup (see list of supporting documents for the Track submission) have been identified, however they do not appear in the HS1 Asset Management System document structure.

A review of station assets undertaken by Pell Frischmann is identified in the CP3 Review. It found that there no major systems renewals that coincide with masterplan works and therefore no major changes made to the LCC models. However, the review did identify some changes to renewal cycles, which were updated in the CP3 LCC models.

The SAMP goes on to say that these changes were spilt into seven key categories for changing the LTC model (page 34). The largest change identified in the seven categories is the change in lift utilisation. Design life was originally based on 45,000 operations per year, however 90,000 operations have been undertaken this year (SAMP page 47). This has been caused by an increase in passenger numbers and changes to the operational strategy, where disabled passengers and those with luggage are encouraged to use lifts rather than escalators to reduce the risk of accidents. The effect of this is reducing the planned life expectancy used in CP2 to match the manufacturer's recommended life expectancy for CP3. HS1 advised that this change was undertaken during the process outlined above, following the Pell Frischmann review; there was no other specific change process used.

The SAMP provides a paragraph entitled Communication and Change Management (paragraph 4.6.13, page 67). It states that asset management improvement programmes are effectively organisational transformations, and therefore an effective change management approach needs to be adopted and supported by effective communications. We have been unable to find any further evidence of this within the documents reviewed.

5.3.1 Taking account of emerging future railway considerations

There is a clear link between managing change and station enhancements when taking account of emerging future considerations. The CP3 Review has included a specific section on how HS1

propose to manage enhancements with other interested parties. Enhancements are discussed in section 3.3 of this report.

The LTC Review mentions two specific railway changes that were considered:

- consideration of incorporating Thameslink costs, due to the increase in passenger numbers (page 51)
- consideration of changing the split of costs between TOCs away from floor space/vehicle departures (page 52)

In both cases, HS1 has determined that a change will not be made and has essentially offered this determination through the consultation process. No further emerging future railway considerations have been found.

Recommendation 22: HS1 and DfT to agree a Change Management Process or provide documented evidence of a Change Management Process to the Reviewer if one exists such that a review can be undertaken and any findings be advised to the DfT before publication of the Final Consultation document at the end of May 2019.

Recommendation 23: HS1 to produce a change management process document for how elements that effect the LTC are managed. This should include (as a minimum):

- Change impact assessments
- Variance analysis and the tracking of change through a log.
- Systematic reporting

Is should also consider change at any point through the process including any scope changes or decisions made at stage gates such as to defer, accelerate and/or change scope of a renewal project.

6. Stakeholder questions

Recommendation 24: DfT should seek stakeholder involvement on the following questions before finalising its determination:

- What funding mechanisms should be employed for the funding of long-term assets? E.g. St Pancras station roof.
- What forward funding period should be considered for asset renewal to capture long life assets where renewals is expected beyond 2060?
- HS1 have determined that they will not pursue seeking the Thameslink SFO at St Pancras to contribute to the LTC until the current franchise changes in 2021, at the earliest. How do TOCs think they are being specifically impacted on whilst the Thameslink SFO does not contribute?
- HS1 have determined that they will not move away from the existing splitting of LTC costs between TOCs away from station space and share of vehicle departures. Do TOCs think that this specifically impacts on their share of the LTC contribution?

7. Other topics

7.1 Project Charter

In the Five Year Asset Management Statement (5YAMS) (issued as part of the Track information documentation) HS1 has stated that it has improved its project management and delivery capabilities, and driven a similar improvement in NR(HS)'s capability. An improvement plan for CP3 is included in Appendix 5, based on the recommendations contained in the 'HS1 Renewals Programme Governance Handbook Report' from Arup.

The 5YAMS lists the NR(HS) Five Year Asset Management Statement for CP3 (December 2018) including appendices as a supporting document. One of the appendices is Appendix L: NR(HS) SP3 Project Delivery Strategy, which includes a diagram (Figure 7: GRIP & Gate Alignment) that maps what is stated as the 'HS1 Gate process' against GRIP (project process used by Network Rail).

Other documents received from HS1 also refer to HS1's process for project delivery that is based on a gated process with six stage gates; this is illustrated in the Arup report as a 'to be' process.

We have not had sight of the project process that is currently being used by HS1 or NR(HS)/Mitie. It is unclear if the references above apply to projects undertaken on the Line of Route only (as this was only included in the consultation pack for Line of Route assets) or also to Stations assets. We are therefore unable to comment on the validity or maturity of the approach to delivery of projects. Visibility of this would provide confidence in the maturity of the project processes to deliver the planned renewals.

Recommendation 25: HS1 to provide documented evidence of their approach to project delivery to the Reviewer such that a review can be undertaken and any findings be advised to the DfT before publication of the Final Consultation document at the end of May 2019.

7.2 Deliverability

The documents issued for consultation refer to the 'HS1 Stations Renewals Plan' as being the document that sets out the planned renewals from 2020 to 2060 (HS1 Stations LTC Review section 8.3 page 35; HS1 SSAS page 5 and other documents). A copy of this document has not been received by the Reviewer.

Table 17 in Section 9.4 of the LTC Review lists 'Significant renewals projects in CP3 (over £250k). The projects listed have a total value of £9.43m which is significantly less than the £18.8m for CP3 stated in the text. Significantly, the list does not include any renewal costs relating to lifts and escalators which is identified as being one of two main reasons for increase in the planned spend in CP3.

While there are costs allocated for specific asset types at each station, we have been unable to find any reference to a scope of works that underpins the costs allocated for CP3 renewal works.

Table 16 in section 9.3 of the Stations LTC contains further information on 'significant renewals projects (over £1.5m) planned for CP5 to CP10 by asset group, again with no indication of the scope involved. By way of an example, entries for Ashford in CP6 include Roof (£1.8m) and Heating (£1.5m) with no further detail provided.

The Station SAS for each group of assets make reference to intervention strategies for each group of assets, however these do not identify which assets are scheduled for renewal within CP3 (or beyond). We have been unable to find any statement of the volume or location of assets to be renewed beyond an allocation of cost to the asset group at each station. For example, the tables provided in Sections 6.1 to 6.4 of the station SAS for Services contain allocations of costs

against each asset group by Station (St Pancras/ Stratford/ Ebbsfleet/ Ashford) but do not provide any further supporting information on the scope or basis of quantities of assets to be renewed. Examination of the CP3 LCRs (Lifecycle Reports) for each station do not reveal any further details of when renewals are planned or for what quantity of assets.

Without a statement of the scope of the renewals planned, it is difficult to comment on the deliverability of the CP3 works beyond consideration of the overall volume of work.

When compared to the renewals completed in CP2, the renewals planned for CP3 are an increase in quantum. However the overall volume of work completed in CP2 is unclear with the total reported as a forecast outturn of £15.884m (Table 8 in Section 4.4.2 of the LTC) and £11.8m (Section 9.4 of the LTC).

Notwithstanding the confusion over the work completed in CP2 and the lack of a scope of the renewals planned for CP3, completion of £18.8m of works across the four stations in five years ought to be easily achievable.

Recommendation 26: HS1 to provide a summary of the scope and timing of the renewals planned for CP3 to the Reviewer so that a review can be undertaken and any findings advised to the DfT before publication of the Final Consultation document at the end of May 2019.

7.3 Reporting requirements

Reporting obligations for stations have not been defined other than the general requirements in the Lease agreement.

Recommendation 27: HS1 and DfT to consider through the CP3 process the appropriate terms of reporting and establish the requirement.

7.4 Baseline | Variance reporting | Log of Changes

A number of minor renewals have been moved to Qx and are stated as a key reason for not being able to assess changes against the baseline in previous submissions.

Recommendation 28: HS1 should document how adjustments and transfers to Qx and LTC will be managed and recorded.

A log of changes has not been developed to the level at which it is clearly defined what changes have occurred, why they have occurred and the impact of the change including impact on service, operations, the asset base, maintenance and programme delivery.

Recommendation 29: HS1 to log historical and future changes during CP3.

7.5 Approach to CP3

Recommendation 30: HS1 to document lessons learned such that what worked well, what was improved and what still needs attention from experience through CP2 is considered in an appropriate manner to provide an enduring and usable source of learning.

Recommendation 31: HS1 to consider actions that can be implemented immediately for CP3 to improve the overall submission process (e.g. optionality)

Appendices

Appendix A - Document list

ID	Document Title / File Name	Date Received
1.	00 HS1 stations - Uncertainty Study Report 2019.pdf	15/03/2019
2.	01 Ashford 2070 OPEX Uncertainty 2019.pdf	15/03/2019
3.	02 Ebbsfleet 2070 - OPEX Uncertainty 2019.pdf	15/03/2019
4.	03 St Pancras 2070 OPEX Uncertainty 2019.pdf	15/03/2019
5.	04 Stratford 2070 OPEX Uncertainty 2019.pdf	15/03/2019
6.	150327 Searchable PDF - Supplemental Agreement amended and restated concession agreement.pdf	01/10/2018
7.	2015 Route AMAS Draft A New Format (V11 2).pdf	03/07/2018
8.	2018-10-10 DfT Engagement - Asset Management Strategic Context (Session 2).pdf	11/10/2018
9.	2019-01-17 Minutes from Stations Document Review Feedback.pdf	23/01/2019
10.	Approach to HS1 Stations Periodic Review.pdf	24/04/2018
11.	Ashford Estimate Validation WIP 20.07.18.xlsb	10/08/2018
12.	Ashford INTL - AHF 260716.xlsx	24/05/2018
13.	Asset Management Document Maps Combined.pptx	21/09/2018
14.	Asset Management Strategy_30 June 2014 submission.pptx	04/07/2018
15.	Complete Screen Shots (A3 to print in colour!).docx	24/05/2018
16.	Compliance matrix with HS1 Ltd updates 25 July 2014.xlsx	24/09/2018
17.	CP3 Ashford Station LCR 28 Feb 19.pdf	06/03/2019
18.	CP3 Ebbsfleet Station LCR 28 Feb 19.pdf	06/03/2019
19.	CP3 St Pancras Station LCR 28 Feb 19.pdf	06/03/2019
20.	CP3 Stratford Station LCR 28 Feb 19.pdf	06/03/2019
21.	CP4-CP9 High Level Plan and CP4 Integrated Plan.xlsx	13/03/2019
22.	DfT CP3 Engagement Meeting - AM Strategic Context - 21 September 2018.pdf	28/09/2018
23.	DfT HS1 Asset Classification Framework v4_Final_17 July 2015.pdf	11/03/2019
24.	DfT HS1 Asset Classification Framework v3_Final Draft_29 May 15.pdf	24/05/2018
25.	Ebbsfleet INTL - AHF 260716 .xlsx	24/05/2018
26.	Ebbsfleet Station Estimate WIP 28.07.18.xlsb	10/08/2018
27.	Escrow Withdrawal Request - Period 7 Signed HS1.pdf	01/10/2018
28.	EXTRACT from DRAFT HS1 Asset Management Annual Statement - 2018-19.pdf	23/01/2019
29.	Final Slides for CP3 workshop on 22 June 2018.pptx	04/07/2018
30.	HS1 Asset Degradation Relationships v2_Final Draft_29 May 15.pdf	24/05/2018
31.	HS1 Asset Hierarchy Criticality Degradation_Final Draft_29 May 15.xlsx	24/05/2018
32.	HS1 Asset Management Annual Statement - 2017-18.docx	04/07/2018
33.	HS1 Asset Management Annual Statement - 2017-18.pdf	11/09/2018
34.	HS1 Asset Management Annual Statement 2016-17 - Final - Signed.pdf	03/07/2018
35.	HS1 Asset Management Policy [DRAFT V4].docx	04/07/2018
36.	HS1 Control Period 2 - Stations Review Final Decision.pdf	24/04/2018
37.	HS1 CP2 2018-19 Funding Request 26.3.18 d3.docx	01/10/2018

38.	HS1 DRAFT Asset Management Annual Statement 2017-18.pdf	24/04/2018
39.	HS1 End User Requirements Station SAS Document v0.5.docx	05/10/2018
40.	HS1 External Areas Station SAS Document v0.11.docx	03/12/2018
41.	HS1 External Areas Station SAS Document v0.6.docx	05/10/2018
42.	HS1 Fittings Furnishings & Equipment Station SAS Document v0.10.docx	03/12/2018
43.	HS1 Fittings Furnishings & Equipment Station SAS Document v0.6.docx	05/10/2018
44.	HS1 Internal Finishes Station SAS Document v0.5.docx	05/10/2018
45.	HS1 Internal Finishes Station SAS Document v0.9.docx	03/12/2018
46.	HS1 Lease - Searchable.pdf	11/10/2018
47.	HS1 Lease.pdf	10/10/2018
48.	HS1 Phase 2 report FINAL 010716.pdf	13/03/2019
49.	HS1 Route Renewal Master Plan - Cost Estimate and Rate Book 20180723.xls	13/03/2019
50.	HS1 Route Renewal Master Plan - Cost Estimate and Rate Book.xls	13/03/2019
51.	HS1 SAMP v0.4 Draft.docx	11/09/2018
52.	HS1 SAMP v0.6 Draft for Submission.docx	06/11/2018
53.	HS1 Services Station SAS Document v0.11.docx	06/11/2018
54.	HS1 Services Station SAS Document v0.7.docx	05/10/2018
55.	HS1 stations - on cost review rev1 Dec 18.pdf	11/12/2018
56.	HS1 Stations Long Term Charge Review for Control Period 3.pdf	06/03/2019
57.	HS1 Substructure Station SAS Document v0.5.docx	05/10/2018
58.	HS1 Substructure Station SAS Document v0.9.docx	06/11/2018
59.	HS1 Superstructure Station SAS Document v0.5.docx	05/10/2018
60.	HS1 Superstructure Station SAS Document v0.9.docx	06/11/2018
61.	HS1-AMS-001 Asset Management Policy.pdf	27/09/2018
62.	HS1-AMS-201 Stations SAMP.pdf	06/03/2019
63.	HS1-AMS-202-1 Substructure Station SAS Document.pdf	06/03/2019
64.	HS1-AMS-203 HS1 Asset Hierarchy (Stations).pdf	06/03/2019
65.	hs1-five-year-asset-management-statement.pdf	01/03/2019
66.	hs1-stations-long-term-charge-review-for-control-period-3.pdf	01/03/2019
67.	Industry Workshop FINAL Complete.pdf	04/07/2018
68.	LCC model - Ashford CP3 v1 18 Sept 2018.xlsb	12/10/2018
69.	LCC model - Ashford CP3 v3 no contingency 08 Nov 2018.xlsb	06/03/2019
70.	LCC model - Ashford DEC 2014.xlsb	24/05/2018
71.	LCC model - Ebbsfleet CP3 v3 no contingency 08 Nov 2018.xlsb	06/03/2019
72.	LCC model - Ebbsfleet DEC 2014.xlsb	24/05/2018
73.	LCC model - St Pancras CP3 v3.2 no contingency 08 Nov 2018.xlsb	06/03/2019
74.	LCC model - St Pancras DEC 2014.xlsb	24/05/2018
75.	LCC model - Stratford CP3 v3 no contingency 08 Nov 2018.xlsb	06/03/2019
76.	LCC model - Stratford DEC 2014.xlsb	24/05/2018
77.	Lloyds Chaps Form - Ashford.pdf	27/09/2018
78.	Lloyds Chaps Form - Ebbsfleet.pdf	27/09/2018
79.	Lloyds Chaps Form - St Pancras.pdf	27/09/2018
80.	Lloyds Chaps Form - Stratford.pdf	27/09/2018

81.	LTC model - CP3 v3.2 no contingency 12 Nov 2018.xlsm	06/03/2019
82.	LTC St Pancras Rate Validation WIP 28.07.18.xlsb	10/08/2018
83.	MITI02 Inv 220337628.pdf	27/09/2018
84.	Periodic Station Project Invoice Summary - Period 7.xlsx	27/09/2018
85.	Periodic Stations Escrow Mandate Withdrawal Request - Period 7.msg	01/10/2018
86.	PR19 ORR-approach-to-pr19.pdf	11/06/2018
87.	Presentation for CP3 stakeholder workshop 2_19Oct17 FINAL WITH ORR.pptx	04/07/2018
88.	Presentation for CP3 stakeholder workshop 3 _ 13 Dec 17 FINAL SENT.pptx	04/07/2018
89.	Revised model Elemental inputs pages 30082018.xlsx	30/08/2018
90.	Route Renewals 2017-18 (P13).xlsx	04/07/2018
91.	Route Renewals 2018-19 (P10).xlsx	24/04/2018
92.	Slides for CP3 workshop 2018.12.14.pdf	11/12/2018
93.	Slides for CP3 workshop on 6 April 2018_FINAL VERSION CIRCULATED.PPTX	11/06/2018
94.	St Pancras INTL - AHF 260716.xlsx	24/05/2018
95.	Stakeholder workshop topics plan.pptx	04/07/2018
96.	Stations Asset Criticality Schedule COMPLETE.XLSX	24/05/2018
97.	Stations CP2 Portfolio v4.xlsx	01/10/2018
98.	Stations LTC Review_30 June 2014 submission to DfT_SUBMITTED.pptx	09/05/2018
99.	Stations Projects Portfolio 2017-18 (P13).xlsx	04/07/2018
100.	Stratford INTL- AHF 260716 .xlsx	24/05/2018
101.	Stratford Station WIP 28.07.18.xlsb	10/08/2018
102.	supplement-to-concession-agreement-december-2017-2[1].pdf	05/10/2018
103.	Technical advice to the HS1 government's representative_ addendum.pdf	24/04/2018
104.	Technical Advice to the HS1 Government's Representative_ Review of the International Stations' CP2 Proposals.pdf	24/04/2018
105.	Venn - Invoice 3440729.pdf	27/09/2018
106.	Venn - Invoice 3443103.pdf	27/09/2018
107.	Venn - Invoice 3457081.pdf	27/09/2018

Appendix B - Q&A Log

HS1 PR19 Review									
32 questions remain open, 0 questions have been answered and await evaluation									
0 questions have been closed									
Query Reference	Status (Open, Closed, Pending)	Question category	Document Reference	Question	Question Author	Date of question (DD/MM/YYYY)	HS1 response date (DD/MM/YYYY)	HS1 response	Is the response satisfactory?
1	Open	General	On Cost Tab	On Cost Tab: The second column of the On Cost sheet refers to a version dated 6th Jan. What is the relevance of this date and should we not have a copy of this document?	Derek Hoey	07/02/2019			
2	Open	On costs	On Cost Tab	It would appear that a previous version of the cost model did not allow for heritage - can this be confirmed please	Derek Hoey	07/02/2019			
3	Open	On costs	On Cost Tab	BWIC (M&E) is stated to be 5.5% for Ebbsfleet - for what reason(s) is this uplift different from the other three stations.	Derek Hoey	07/02/2019			
4	Open	On costs	On Cost Tab	FM Manage Fee is stated to be 15% for Ashford Station for what reason(s) is this uplift different from the other three stations.	Derek Hoey	07/02/2019			
5	Open	Unit Rates	Notes Tab	Notes Tab - Please provide an explanation of how the unit cost rates at current prices have been de-escalated to 2Q 2013 and where possible provide examples.	Derek Hoey	07/02/2019			
6	Open	Others	Notes Tab	On the Notes and Exclusion tab Section 1 refers to the Assumptions page - we cannot locate this page within the workbook received	Derek Hoey	07/02/2019			
7	Open	Others	Notes Tab	On the Notes tab and the Notes and Exclusion (Section 8 Basis of Costing) 8.1-b states that you have a price base of 2Q 2013 - please confirm and provide details of how these rates were adjusted to the required base date.	Derek Hoey	07/02/2019			
8	Open	Others	Notes Tab	On the Notes tab and the Notes and Exclusions (Section 8 Basis of Costing) 8.1-c-i) mentions the use of Spons pricing book - please confirm which year was used as a basis.	Derek Hoey	07/02/2019			
9	Open	Others	Notes Tab	Ditto 8.1 - e) - please confirm that there is a 'typo' and should read 'quantity but no rate'	Derek Hoey	07/02/2019			
10	Open	Others	Notes Tab	Ditto 8.1 - f) confirm that FFE is Furniture, Fixtures and Fittings please	Derek Hoey	07/02/2019			
11	Open	Others	Glossary of Terms - Quantity	Glossary of Terms - Quantity - states that quantities have been taken from costplans/bill are these available for this review	Derek Hoey	07/02/2019			
12	Open	General	HS1 Renewals Programme Governance Handbook Report v1.1	This document was issued with the suite of documents for consultation on the Line of Route. Can you confirm that this will also apply to Stations projects? If so should it be added to the list of documents for consultation on the Stations review?	Grant Richardson	15/03/2019			
13	Open	Stations	HS1-AMS-2011- HS1 Strategic Asset Management Plan for Stations	Page 5 lists documents that are part of the Asset Management System for Stations. The 'HS1 Stations Renewals Plan' is identified as setting out the total volume of renewals required, this has not been provided with the consultation documentation. Would it be possible to have a copy of this plan?	Grant Richardson	15/03/2019			
14	Open	Stations	CP3 St Pancras Station LCR	Section 5.2.4 (page 27) makes reference to the 'CP3 Delivery Plan'. Is this the same as the Stations Renewal plan referred to above? If not would it be possible to have a copy? Note that the other LCR documents all contain similar references.	Grant Richardson	15/03/2019			
15	Open	Stations	LTC models	In the absence of the Delivery Plan or Project Charters requested above (which we understand may not be available), would it be possible to have a summary of the scope of works that underpins the costs included in the LTC models for renewal of assets?	Grant Richardson	15/03/2019			
16	Open	Stations	SAMP/SSAS/ LCR/ LTC	We are struggling to understand the linkage between the costs in the LTC models and the approach outlined in the SAMP/ SSAS/ LCR documentation. Could you demonstrate how the principles discussed in the SAMP/ SSAS/ LCR have been applied to derive the costs included in the LTC models?	Grant Richardson	15/03/2019			
17	Observation	Stations	SSAS/ LCR	Section 9.5 of the SSAS provides details of the asset inventory with estimated life, however it does not identify the asset age. Inclusion of this information would help to understand the remaining life/ time to intervention for the assets which would underpin the costs included in the LTC models.	Grant Richardson	15/03/2019			
18	Open	Route assets	SAMP/ SAS	The SAMP and SAS documents refer to the differing levels of traffic on each part of the route (e.g. for line of route assets some of the sections are used by SE high speed domestic services in addition to the Eurostar services). Has the differing duty cycles arising from the different levels of usage been taken into account when considering asset life/ time to intervention?	Grant Richardson	15/03/2019			
19	Open	Stations	Stations Long Term Charge Review for Control Period 3	The 'Stations Long Term Charge Review for Control Period 3', section 5. Overview of approach for CP3; Figure 4, page 25 identifies the artefact 'HS1 Asset Management Objectives'. If this is a separate document, then please can we have a copy.	Steve Mitchell	19/03/2018			
20	Open	Stations	Stations Long Term Charge Review for Control Period 3	Why is there a difference between the Asset Management Objectives set out in the "Stations Long Term Charge Review for Control Period 3", page 27 and the "HS1 Stations Strategic Asset Management Plan", section "2.1.1 Asset Management Objectives developed within Control Period 2 (from 2015 to 2020)"? For example: a. The former lists 4 'Business Attributes' and the latter has 7 (the additions being 'Passenger Satisfaction Score', 'Passenger Comfort' and 'Legal compliance') b. Level 2 objectives of the former document are in some cases different to those listed in the sub-sections to 2.1.1 of the latter document and have different timeframes where they appear to be the same.	Steve Mitchell	19/03/2018			
21	Open	Stations	HS1 Stations Strategic Asset Management Plan (section 2.7.1)	There is a list of stakeholders provided within the "HS1 Stations Strategic Asset Management Plan", section "2.7.1 Stakeholders" and "Appendix C – HS1 Stakeholder context". Why does it appear that 'Passengers', or other such station users, are not considered discretely as stakeholders? Particularly given the focus of some asset management objectives and 'Asset importance' measures (See section 2.2.2.1 Asset Importance, page 26) on the passenger.	Steve Mitchell	19/03/2018			
22	Open	Stations	HS1 Stations Strategic Asset Management Plan (section 2.2.2.1)	Document "HS1 Stations Strategic Asset Management Plan", Section "2.2.2.1 Asset Importance"; "Table 10: Identifying the importance of an asset to the asset management objectives", page 26. There are a number of cells within table for which no definition is given for the scoring. There is no explanation given in the text as to why these gaps exist. Can it be assumed that where such empty cells exist within the table that the intersection between the 'objectives' and the 'Scoring' is invalid; i.e. cannot the 'objective' cannot be given the corresponding score? For example a 'Comfort' Scoring of '7' is invalid?	Steve Mitchell	19/03/2018			
23	Open	Stations	Stations Long Term Charge Review for Control Period 3	Page 6, left hand column, continuation of bullet 1 from P6: "...with operators around operational criticality." What are the operational critical assets as agreed with TOCs?	Richard Golding	19/03/2018			
24	Open	Stations	Stations Long Term Charge Review for Control Period 3	Page 6, left hand column, bullet 1: "Removal of the 0.6% p.a. compounding efficiency overlay..." What is the justification for removing the efficiency overlay?	Richard Golding	19/03/2018			
25	Open	Stations	Stations Long Term Charge Review for Control Period 3	Page 9, left hand column, bullet 6: "...value for money through minimum whole-life cost" How do HS1 measure VIM when they do not have an integrated view over OX + LTC	Richard Golding	19/03/2018			

HS1 PR19 Review

32 questions remain open, 0 questions have been answered and await evaluation
0 questions have been closed

Stations

Query Reference	Status (Open, Closed, Pending)	Question category	Document Reference	Question	Question Author	Date of question (DD/MM/YYYY)	HS1 response date (DD/MM/YYYY)	HS1 response	Is the response satisfactory?
26	Open	Stations	Stations Long Term Charge Review for Control Period 3	Page 13. Right hand column, last two bullets and Page 14 left hand column, top 4 bullets. AM and LCC/LTC documentation Please confirm that the consultation draft supporting documentation has not materially changed from the documentation already in our possession	Richard Golding	19/03/2018			
27	Open	Stations	Stations Long Term Charge Review for Control Period 3	Page 15, left hand column, bullet 1: - these describe HS1 station asset management "as is" and influence, rather than provide direct inputs into, the Life Cycle Cost modelling." What controls the inputs into the LCC modelling?	Richard Golding	19/03/2018			
28	Open	Stations	Stations Long Term Charge Review for Control Period 3	Page 26, left hand column, paragraph 2: - and be hungry about chasing future efficiencies." What are the plans and targets for future efficiencies?	Richard Golding	19/03/2018			
29	Open	Stations	Stations Long Term Charge Review for Control Period 3	Page 40, left hand column, 9.2.4.1, paragraph 1: - employed Network Infrastructure Consultants to carry out a cost validation of the rates." What assurance has been undertaken over the renewal volumes/quantities?	Richard Golding	19/03/2018			
30	Open	Stations	Stations Long Term Charge Review for Control Period 3	Page 47, right hand column, paragraph 3: - should it not be possible to reach commercial agreement between HS1 Ltd and the operator(s)." What examples do HS1 have of projects that did not proceed because of failure to agree commercial terms with TOCs?	Richard Golding	19/03/2018			
31	Open	Stations	SAS	"Table 2: Investment Profile derived from TLC model" contains a column for HS1 Baseline 2015 Ref and LTC Model 2018 Ref. Please can you confirm that an asset marked as 'n/a' in the LTC Model 2018 Ref column means the asset is not included for consideration in the LTC for the CP3 submission, and/or whether 'n/a' in this column has any other meaning.	Steve Mitchell	21/03/2019			
32	Open	Stations	SAS	"Table 2: Investment Profile derived from TLC model" contains a column for HS1 Baseline 2015 Ref and LTC Model 2018 Ref. Please can you confirm that if an asset marked as 'n/a' in the HS1 Baseline 2015 Ref column means that the asset has been introduced since the Baseline, and/or whether 'n/a' in this column has any other meaning.	Steve Mitchell	21/03/2019			

Appendix C - Schedule 10 Analysis

		Extract from HS1 Lease dated 30 September 2010, Schedule 10 - selected clauses			With regard to the CP3 review process; to which control period would the clause be relevant?	In which HS1 artefact should the clause be satisfied?	Section within document as indicated by HS1	Initial view of likelihood of compliance (RAG)	Comments
GHD ID									
S1	1	2.			The Life Cycle Purpose	Title only		n/a	
S2	2	2.1			The Life Cycle Purpose is to ensure that each Station shall be in good and substantial repair and condition during the whole of the Life Cycle Period.	CP2 re attainment; CP3 re intent			Not sure how compliance with this requirement can be confirmed without an agreement between HS1 and the DfT as to which it means in practise.
S3	3	3.			Life Cycle Works	Title only		n/a	
S4	4				During the Term and without prejudice to the Tenant's obligations under clauses 4.3.1 and 4.14, the Tenant shall carry out the Life Cycle Works in accordance with this schedule.	CP2 re achievement; CP3 re appropriateness			Applies during the control period and requires HS1 to apply the implement the agreed strategy, plans, etc. for that control period.
S5	5	4.			Asset Management Strategy	Title only		n/a	
S6	6	4.1			The Tenant shall prepare a Asset Management Strategy for each Station which, in each case, complies with the requirements set out in Annex 1 to this schedule.	CP3	AM Strategy		Refer to requirements in Annex 1. Note that the requirement is for 'a Asset Management Strategy for each Station'. HS1 have segmented the strategies by element, rather than by station. So, in theory (without close investigation) the strategy is first defined by element type and then considered in the context of each station for the population the station. Expenditure looks to be defined by Station and by element within the station. I do not read the clause requirement to

									be a separate document for each station, rather a strategy for each station; I would therefore suggest that HS1's approach conforms to the requirement - need to check the content based on Annex 1.	
S7	7	5.			Life Cycle Reports		Title only	n/a		
S8	8	5.1			The Tenant shall submit a Life Cycle Report to the Government's Representative for each Station no later than nine (9) months prior to the end of each Review Period.	CP3	LCR	G	Review periods end on 31 March. Review Periods are 5 years in length. Review Period 1 ended on 31 March 2015. Therefore CP2 ends 31 March 2020. Life Cycle reports are therefore are to be submitted by end of 1 July 2019 .	
S9	9	5.2			Each Life Cycle Report shall, in respect of each Station, include:		LCR			
S10	10				Works undertaken and costs incurred		Title only	n/a		
S11	11	5.2.1			a summary of the following in respect of the current Review Period:		LCR			
S12	12		(a)		the Life Cycle Works carried out by the Tenant (or that it is anticipated will have been carried out by the end of the current Review Period);		LCR	4.1.2	R	Requires further information. It is not clear if the list of works includes works carried out from the start of CP2 up to this time. For example, Table 5 in Section 4.1.2 for Stratford contains 9 items. 3 items are stated to be likely deferred to CP3. 3 items are stated to be completed by June 30, 2018. 1 item is stated to be underway. It is therefore assumed that 2 items were

									<p>completed prior to the development of the LCR.</p> <p>Additionally, Table 5 in Section 4.1.2 for Stratford only contains non-standard LTC Asset System Category for "5-Services" is included; it is unknown whether other asset system categories (refer Appendix B, table in B1) are absent because no work was done or is planned or because they have been inadvertently omitted.</p> <p>Additionally, there is no breakdown by year.</p>
S13	13		(b)	the Available Life Cycle Funds at the end of each Financial Year (or the anticipated Available Life Cycle Funds by the end of the last Financial Year in the current Review Period);		LCR	4.2.1.5	R	<p>Requires further information.</p> <p>The graph in 4.2.1.5 "shows the change in the Escrow balance". "Escrow" is defined but not in the context of 5.2.1 (b); the figure in Section 1.1 appears to relate 'Escrow' to 'Annuity'. The line on the graph for "Total Escrow Cash" is not defined; it is assumed this is the forecast situation for CP2, presumably the forecast made prior to CP2 commencing. The "Actual", however, seems to be a flat line of always being £5,000k. It is, therefore, unclear what the interpretation of</p>

									<p>84 overdue faults in P6.</p> <p>The report for Stratford does not comment on how 100.00% availability is achieved when there are 702 reactive faults and 84 overdue faults.</p> <p>The report for Stratford does not comment on the recent significant increase (P5 and P6) in overdue faults.</p> <p>Further information is not required for Ashford other than improving Table 8 in Section 4.3.1 to differentiate between "Reactive Works" and "Not Completed".</p>
S19	19		(h)	the renewals and replacements (if any) undertaken by the Station Operator in order that it discharged its Safety Obligations in respect of the Station but which were not identified in the current Life Cycle Report ("Station Safety Works");		LCR	4.1.3	R	<p>Requires further information for Stratford and Ebbsfleet.</p> <p>While it is stated for Stratford and Ebbsfleet that no Safety Obligaion renewals or replacements were undertaken by the SFO, it does not state if HS1 Limited undertook Safety Obligaion renewals or replacement,, and it does not state that no Safety Obligation renewals or replacements were required.</p> <p>Further information is not required for Ashford and St. Pancras.</p>

S20	20	5.2.2			in respect of the current Review Period a progress report, comparison and reconciliation by reference to the Life Cycle Report approved for the current Review Period of:		LCR			
S21	21		(a)		the Life Cycle Works actually completed to date against those anticipated giving the reasons for any differences;		LCR	4.1.2	R	Requires further information. The Life Cycle Works listed in Table 5 of Section 4.1.2 are only those stated "...to be completed in the remainder of CP2." It is not known if there were other Life Cycle Works that have already been completed.
S22	22		(b)		the Life Cycle Works Cost incurred to date against those anticipated giving the reasons for any differences;		LCR	4.1.2	R	Requires further information. For those items listed in Table 5 of Section 4.1.2 the budgets and costs are provided. However, there is no information in Section 4.1.2 on the reason for the differences between budgets and costs.
S23	23		(c)		the Life Cycle Works Savings achieved to date against those anticipated;		LCR	4.2.1.3	A	Conditional compliance. It is stated in Section 4.2.1.3 that no savings were identified. However, it is not clear if this means none were anticipated, or that no savings have been identified where they were previously anticipated.
S24	24	5.2.3			a summary of the following up to the end of the previous Review Period for each		LCR			

					Element of the Station of:				
S25	25		(a)		the aggregate amount of the Life Cycle Works Cost;	LCR	4.2.3	R	Requires further information. Stated that aggregate Life Cycle Works data is not yet available for CP2.
S26	26		(b)		the aggregate amount of the Deferred Life Cycle Works Savings (if any); and	LCR	4.2.3	R	Requires further information. Stated that aggregate Life Cycle Works data is not yet available for CP2.
S27	27		(c)		the aggregate amount of the Life Cycle Works Savings (if any);	LCR	4.2.3	R	Requires further information. Stated that aggregate Life Cycle Works data is not yet available for CP2.
S28	28				Forecast Life Cycle Works	Title only		n/a	
S29	29	5.2.4			in respect of the next Review Period:	LCR			
S30	30		(a)		the Tenant's detailed proposals for the carrying out of the Forecast Life Cycle Works including any notices consents and approvals required in order to carry out and complete them;	LCR	5.2.4	R	Requires further information. Requires access to other documentation. Reference is made to an "Asset Change Control process", with general text provided for discrete project stages. Stated that "specific detail" will be in the "CP3 Delivery Plan".
S31	31		(b)		the Forecast Life Cycle Works Cost;	LCR	5.2.2.1	G	Compliant. CP3 CAPEX estimates for renewals is provided.
S32	32		(c)		the effect of any Relevant Changes of Law that will occur during the Review Period;	LCR	5.2.3.2	R	Requires further information. Appendix A in all four LCRs states that "Clause 5.2.4c" is addressed in

									<p>"Section 5.2.3.2". It is noted that only St. Pancras LCR contains a Section 5.2.3.2. The other three LCRs do not contain a Section 5.2.3.2. It is noted that Section 5.2.3.1 in the other three LCRs is entitled "Future Changes in the Law" and appears to contain a response to Clause 5.2.4(c). The basis for assessing compliance with Clause 5.2.4(c) is based upon the text contained in Section 5.2.3.2 in St. Pancras LCR and Section 5.2.3.1 in the Stratford, Ashford and Ebbsfleet LCRs.</p> <p>The response includes reference to a review by the SFO that "could cause additional funds to be spend in the remainder of CP2" as a result of the Grenfell fire. The "effect" is not stated.</p>
S33	33		(d)	the forecast amount of Available Life Cycle Funds at the end of each Financial Year;		LCR	5.2.2.2	R	<p>Requires further information.</p> <p>It is stated in the Stratford, Ebbsfleet and St. Pancras LCRs that the forecast amount of Available Life Cycle Funds will be provided in a later version of the LCR.</p> <p>It is noted that Table 12 in Section 5.2.2.2 of the Ashford LCR contains information that</p>

										appears to meet the requirements of Clause 5.2.4(d); however, the data in the table appears to be for St. Pancras, not Ashford.
S34	34	5.2.5			in respect of the remainder of the Life Cycle Period a summary of any changes to:		LCR			
S35	35		(a)		the Forecast Life Cycle Works to be undertaken in each subsequent Review Period and Overhang Period in respect of each Element of the Station;		LCR	5.3	R	Requires further information. Requires access to other documentation. Reference is made to "Lifecycle Cost models", with a 45 year profile provided in response to Clause 5.2.5(a). References to station elements is included in the 45 year profile. Note that the Stratford LCR, the Ashford LCR and the Ebbsfleet LCR all incorrectly include the St. Pancras 45 year profile, not the 45 year profile for the station that is the subject of the LCR.
S36	36		(b)		the Forecast Life Cycle Works Cost in each subsequent Review Period and Overhang Period in respect of each Element of the Station; and		LCR	5.3	R	Requires further information. Requires access to other documentation. Reference is made to "Lifecycle Cost models", with a 45 year profile provided in response to Clause 5.2.5(a). References to station elements is included in the 45 year profile. Note that the

									Stratford LCR, the Ashford LCR and the Ebbsfleet LCR all incorrectly include the St. Pancras 45 year profile, not the 45 year profile for the station that is the subject of the LCR.
S37	37		(c)	a forecast of the amount of Available Life Cycle Funds for each subsequent Review Period and Overhang Period;		LCR	6.2.3	R	Non-compliant. It is determined that the information in Section 6.2.3 does not address Clause 5.2.5(c). Further, the information in Section 6.2.3 appears to be from a LCR for the end of CP1/start of CP2.
S38	38			Deferrals		Title only		n/a	
S39	39	5.2.6		the Tenant's proposals (if any) for:		LCR			
S40	40		(a)	the deferral to any later Review Period or Overhang Period or the permanent omission of any Life Cycle Works that are identified in the Asset Management Strategy as being required in the Review Periods and/or Overhang Periods following the Review Period in which the Life Cycle Report is produced: and/or		LCR	6.1	R	Non-compliant. Section 6.1 does not appear to have been updated for the CP3 submission. Section 6.1 makes reference to "F&G models" and "F&G plans". "F&G" is not defined in the LCR Glossary.
S41	41		(b)	the distribution of any Deferred Life Cycle Works Saving pursuant to paragraph 7.1;		LCR	6.1	R	Non-compliant. Section 6.1 does not appear to have been updated for the CP3 submission. Section 6.1 makes reference to "F&G models" and "F&G plans". "F&G" is not defined in

S47	47		(e)		the forecast reduction in the Long Term Charge, the LTC and the Tenant's Share arising from paragraph 5.2.6(b);		LCR	6.1	R	Non-compliant. Section 6.1 does not appear to have been updated for the CP3 submission. Section 6.1 makes reference to "F&G models" and "F&G plans". "F&G" is not defined in the LCR Glossary.
S48	48				Distribution of Life Cycle Works Savings		Title only		n/a	
S49	49	5.2.7			the Tenant's proposals for any distribution of any Life Cycle Works Saving pursuant to paragraph 7.2, identifying the amount of the Life Cycle Works Saving, the reduction in the Long Term Charge, the LTC and the Tenant's Share, setting out the reasons why the Tenant considers such distribution should be made and providing all relevant supporting information;		LCR	6.1	R	Non-compliant. Section 6.1 does not appear to have been updated for the CP3 submission. Section 6.1 makes reference to "F&G models" and "F&G plans". "F&G" is not defined in the LCR Glossary.
S50	50				Adjustments to Available Life Cycle Funds		Title only		n/a	
S51	51	5.2.8			details of any Adjustment to the Available Life Cycle Funds made pursuant to paragraph 6.4.4 in the current Review Period (or anticipated to be made prior to the end of the current Review Period) and the arrangements (if any) which the Tenant has implemented and/or proposes to implement in order to mitigate the likelihood that any of the circumstances described in paragraph 5.4.7(a) to (c) will occur		LCR	6.1	R	Non-compliant. Section 6.1 does not appear to have been updated for the CP3 submission. Section 6.1 makes reference to "F&G models" and "F&G plans". "F&G" is not defined in the LCR Glossary.

					("Adjustment Arrangements"):				
S52	52				Long Term Charge	Title only		n/a	
S53	53	5.2.9			a description of any arrangements the Tenant has reached with Users pursuant to the terms of the Station Access Agreement to modify the LTC;	LCR	6.2	R	Non-compliant. No information is provided on any arrangements HS1 Limited has reached with the Train Operating Companies to modify the LTC. Further, the information in Section 6.2.3 appears to be from a LCR for the end of CP1/start of CP2.
S54	54	5.2.10			any proposals by the Tenant for a modification to the LTC to recover:	LCR			
S55	55		(a)		any Increased Life Cycle Costs which it has funded in accordance with paragraph 6.4; and/or	LCR	6.2	R	Non-compliant. No information is provided on proposals by HS1 Limited to recover Increased Life Cycle Costs from the Train Operating Companies. Further, the information in Section 6.2.3 appears to be from a LCR for the end of CP1/start of CP2.
S56	56		(b)		any costs which it has suffered or incurred in connection with the Station Operator carrying out Station Safety Works in the current Review Period;	LCR	6.2	R	Non-compliant. No information is provided on proposals by HS1 Limited to recover any costs resulting from the Train Operating Companies carrying out Station Safety Works.

									Further, the information in Section 6.2.3 appears to be from a LCR for the end of CP1/start of CP2.
S57	57	5.2.11			any proposal by the Tenant for a modification to the LTC (other than pursuant to a proposal in paragraphs 5.2.6(b), 5.2.7, 5.2.9 or 5.2.10) to take effect from the beginning of the next Review Period:		LCR		
S58	58		(a)		setting out the reasons why the Tenant considers that such modifications should be made and providing all relevant supporting information; and		LCR	6.2	<p>Non-compliant.</p> <p>No information is provided on any proposal by HS1 Limited to modify the LTC, and no information on the reasons for those modifications.</p> <p>Further, the information in Section 6.2.3 appears to be from a LCR for the end of CP1/start of CP2.</p>
S59	59		(b)		in the case of a modification resulting from a Relevant Change of Law, confirming that the Tenant has notified each User of the Relevant Change of Law and of its assessment of the amount of the modification, and provided Users with such information as they shall reasonably require, in a form and amount of detail which is sufficient to enable Users to make a proper assessment of the effect of the Relevant Change of Law and of the Tenant's assessment; and		LCR	6.2	<p>Non-compliant.</p> <p>No information is provided on any proposal by HS1 Limited to modify the LTC due to a Relevant Change of Law.</p> <p>Further, the information in Section 6.2.3 appears to be from a LCR for the end of CP1/start of CP2.</p>
S60	60				Modifications to the Asset Management		Title only		n/a

					Strategy and the Life Cycle Budget					
S61	61	5.2.12			the Tenant's proposals for any modifications to the Asset Management Strategy (including the Life Cycle Budget) that are required to reflect its proposals in respect of the matters set out in paragraphs 5.2.1 to 5.2.11 above and/or to ensure that the Asset Management Strategy continues to satisfy the requirements set out in Annex 1 to this schedule; and	In theory this would be a justification of any changes made by HS1 to the strategy from CP2 to CP3. For example if there was a move to risk based assessment of renewals	LCR	3.1	G	Compliant. It is noted that HS1 Limited is stated to be developing a Strategic Asset Management Plan and a "...series of Specific Asset Strategies...". It is not reported that there are any modifications to the Asset Management Strategy.
S62	62				General		Title only		n/a	
S63	63	5.2.13			such further details in respect of the matters described in paragraphs 5.2.1 to 5.2.11 as may be reasonably required by the Government's Representative.		LCR	n/a	A	Presumably, after the Government's Representative has reviewed the GHD report there will be an opportunity to formally respond to HS1 Limited to request further details as per the comments contained above.

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12501362-GHD-RP-G-1001-F03_HS1 CP3 Phase 2 Stations Report

Revision	Authors	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
F01	W Auton S Mitchell R Golding G Richardson R Aitken	D Self		C Murphy		01/04/2019
F02	W Auton	C Murphy		C Murphy		26/04/2019
F03	W Auton	C Murphy		C Murphy		09/07/2019

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