Subject to FirstGroup and GWR approvals

Great Western Railway

Chippenham Station Hub Phase 1 Outline Business Case

Title:

Chippenham Station Hub

Phase 1 Outline Business Case

Date:

June 2017

Location:

Chippenham Station

Information:

This document sets out the Outline Business Case for the Chippenham Station Hub Phase 1 project. It forms a separate independent sub set of the overall Chippenham Station Hub project for which an Outline Business Case will be developed separately.

Notice

This document and its contents have been prepared and are intended solely for GWR's use in relation to the Outline Business Case submission to the Swindon and Wiltshire Local Enterprise Partnership (SWLEP) for the Chippenham Station Hub Phase 1 scheme.

GWR assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

Version	Description	Edited by	Summary of change	Date
0.1 Draft	Working Draft	MB / MC	Wiltshire Council comments	24/03/17
0.2 Draft	Working Draft	MB	Completed draft	31/03/17
0.3 Draft	Working Draft	MB	Additional Wiltshire comments	18/05/17
0.4 Draft	Working Draft	MB	Economics and finance inputs	05/06/17
0.5 Draft	Final Draft	MB	Final draft	12/06/17
0.6 Final	Final Report	MB	Final Wiltshire and ITA comments	23/06/17

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Background

This document forms the Outline Business Case (OBC) for the Chippenham Station Hub Phase 1 scheme. The Chippenham Station Hub project has been in development for several years and Great Western Railway (GWR) has developed a Phase 1 scheme to provide early delivery of station and access improvements by combining them with its planned gateline *project (a franchise commitment to deliver ticket barriers to each station entrance by the end of 2017).*

This OBC is structured around the DfT's recommended five case model for a Transport Business Case: strategic; economic; financial; commercial; and management. The Strategic Case discusses the advantages and disadvantages for the scheme in relation to policy and objectives. Based on the Strategic Case, the preferred scheme is carried forward to be considered in the Economic, Financial, Commercial and Management Cases.

The full cost of implementing the proposed scheme is estimated to be £3.1 million of which £1.1 million is the existing GWR funded commitment to install ticket gatelines (all outturn prices). The Initial Benefit-Cost Ratio (BCR) is 4.11, demonstrating that the scheme will offer very high value for money.

Strategic Case

A strong rationale exists for major investment at Chippenham station to provide a gateway into Chippenham. GWR and Network Rail are working together through the Western Programme Alliance to deliver the complete modernisation of the Great Western route. This is the largest investment in our railway since the Victorian era and will provide a wide variety of major benefits for Chippenham including:

- New Intercity Express Trains providing up to 24% more seats on each train and improved customer experience including more tables, greater leg room and improved customer information systems
- Typical journey times of 63 minutes between Paddington and Chippenham with fastest trains taking only 57 minutes
- 74 trains per day between Paddington and Chippenham, an increase of 10 from today, with 3 trains per hour in peak hours
- 16000 additional seats each day on trains through the station, an increase of 46%
- Major station improvements at Paddington, Reading (completed in 2014), Didcot, Bath Spa and Bristol Temple Meads to reduce congestion and improve access, including through the installation of ticket gatelines at Chippenham itself.

Investment at Chippenham station, building on the franchise commitment to deliver the gatelines, aligns with this strategy by improving customer experience and capacity so that the station may act as a gateway for the town onto the strategically significant rail

corridor. For the town this is particularly important as investment at the station will help maximise the value to the town of the dramatically improved rail connectivity.

Swindon & Wiltshire LEP and Wiltshire Council recognise this and delivery of improvements at the station, to regenerate the area and reduce severance, is recognised in the Chippenham Masterplan. The scheme also aligns with the Strategic Economic Plan, Wiltshire Local Transport Plan and Core Strategy.

Specific problems have been identified at the station that Phase 1 seeks to address including:

- Facilities provide a poor quality arrival experience in the booking hall in both directions with pinch points causing pedestrian congestion;
- Inadequate arrangements for the retail provision limits the role of the café particularly in providing external provision.;
- Inadequate station security fails to control fare evasion, leading to loss of revenue to the train operator and central government, and creates a generally less pleasant station environment *(to be addressed by franchise commitment to install gatelines)*;
- Lack of step free access from the north side of the railway. This restricts access to the station, and the access to services it represents, and causes major severance for mobility impaired users; and
- Significant growth in demand, resulting from the major service improvements and population growth, will result in the above issues becoming more acute.

These problems can be summed up by the statement that Chippenham Station does not currently fulfil its role as a gateway to the town adequately. It does not provide a high quality arrival experience, neither showcasing the town's heritage or its economy, it provides an inadequate customer experience and access remains restricted, especially from the north.

In order to solve the specific problems outlined above for Phase 1, six SMART objectives for the Phase 1 improvements to Chippenham station have been identified:

1. Improve station security through restricted access and greater staff presence;
2. Improve revenue capture and reduce rate of ticketless travel through the regulation of access to ticket holders;
3. Reduce severance across the railway through provision of step free access on the north side;
4. Provide improved accessibility at the railway station by delivering an enhanced ticket hall and improved café/retail facilities;
5. Improve accessibility to/from the station with cycling improvements and a cycle hire facility; and
6. Increase customer satisfaction with an enhanced ticket hall, improved café/retail facilities and enhanced station security.

The scope of the proposed scheme is designed to address these objectives in two parts:

Part A – station improvements:

- Gatelines to all station entrances with a manned gateline on the disused main platform and remote operated gatelines in the north car park and on the public footbridge across the railway (allowing access to the lift to the operational platforms); *Franchise commitment*
- New booking hall with a new entrance onto the frontage and significantly improved customer experience within the hall; and
- Improved retail unit providing a high quality space for the existing café with frontage onto the proposed station square *(part of the Hub project).*

Part B – access improvements:

- Access improvements on both sides of the station including: *LGF funded*
    - A new north side lift onto the public footbridge, providing step free access across the railway as well as to platforms from the north side;
    - Public realm, walking and cycle improvements on the south side including additional cycle parking, an 8 bay docking cycle hire station *(to be delivered early alongside Part A)*, wayfinding signage and surface treatments; and
    - Improvement works to the bus interchange/turning point within the station forecourt.

Phase 1 aligns with the wider Station Hub project as set out in the introduction. In principle, Phase 1 will deliver improvements either on or immediately adjacent to the station and future phases of the Station Hub scheme will then redevelop the surrounding car parks and wider area. It will thus not lead to any abortive work but instead seeks to provide early delivery of certain outputs and commence the phased delivery of the wider scheme.

There is therefore **a strong rationale to invest in the scheme**. Major improvements are underway on the mainline through Chippenham and **without investment the station will restrict Chippenham's opportunity** to take advantage of these. A number of specific problems have been identified and **objectives** set for the scheme that are both **achievable and worthwhile** for Phase 1. The scope of **the scheme will address these objectives** while also acting as **a stepping stone to delivery of the wider Chippenham Station Hub** scheme.

Economic Case

The economic assessment has been prepared in a way considered to be proportionate to the size of the scheme. The economic benefits of the Phase 1 station improvements outweigh its costs and any negative impacts. The scheme has an **Initial BCR of 4.11**, and an **NPV of £8.7 million**. The scheme offers **Very High Value for Money.** The scheme is also **Financially Positive** when appropriate revenue transfer to central government is taken into account.

Furthermore, the scheme presents no worse than Slight Adverse environmental impacts, for which mitigation is possible, and offers Moderate Beneficial social impacts with regard to journey quality, severance and security. The scheme also strongly delivers against key

objectives including reduced severance and improved accessibility from the north side of the railway.

The following headline conclusions can be drawn from the economic appraisal results:

- The scheme represents **Very High Value for Money**, with a strong initial BCR supported by positive findings from the qualitative assessments;
- The application of DfT revenue transfer principles, which correctly reflect the accounting of revenue attributable to new schemes, demonstrates that the scheme is **financially positive**.
- The qualitative assessments demonstrate a **strong impact** on meeting the wider social and economic objectives of the scheme to **improve journey quality and reduce severance**.

The assessment is summarised in the table below:

Assessment Type	Conventional	DfT Revenue Transfer	Detail
Initial BCR	4.11	Financially Positive	Includes monetised benefits as shown in the DfT's Analysis of Monetised Costs and Benefits (AMCB) table: economic efficiency (journey time and operating cost savings); accident savings; and greenhouse gas emission reductions.
Present Value of Benefits (PVB)	£11.4 million	£2.1 million	2010 prices, discounted to 2010 in line with DfT guidance.
Present Value of Costs (PVC)	£2.8 million	-£6.5 million	2010 prices, discounted to 2010 in line with DfT guidance. Includes allowances for renewals over appraisal period.
Net Present Value (NPV)	£8.7 million	£8.7 million	The NPV indicates by how much the benefits of a scheme exceed the costs. This NPV is for the 'initial BCR'.
Adjusted BCR	4.11	Financially Positive	No additional monetised impacts
Qualitative Assessment	Moderate Beneficial	Moderate Beneficial	Slight adverse historic environment impact offset by moderate beneficial journey quality, severance and security impact
Key Risks / sensitivities	Risk budget applied to scheme costs: £0.19m *(real terms market prices)*	Risk budget applied to scheme costs: £0.29m *(real terms market prices)*	Key risks include NR approvals and listed building consent. Therefore a risk budget has been included in the estimates of 10% for Part A and 30% for Part B to account for delay or additional cost as a result. Appropriate Optimism Bias has also been applied in the economic appraisal with 18% for Part A and 50% for Part B due to the early stage of development.
VfM Category	Very High	Very High	Monetised assessments suggest that the VfM category should be Very High for the proposed scheme. Qualitative assessment

			outcomes are not significant enough to alter the category.

The scheme will deliver moderate benefits for transport network users through a combination of the mode shift from private car to rail attracted by the station improvements and the beneficial impacts on the customer experience of rail users themselves. Key impacts include:

- **Moderate reduction in vehicle trips per annum** of up to 23,000 spread out throughout the M4 corridor but with the greatest density between Chippenham and Bath
- **Large reduction in car kms per annum** of up to 1.5 million, reflecting the high average trip length by rail, with the largest reduction off the M4 between Swindon and Reading
- **Moderate improvement in customer experience** for station users – assessed in the social impact section.

Sensitivity tests undertaken as part of the Economic Case demonstrate that:

- Scheme economic performance is reduced under a scenario in which underlying demand growth is reduced or scheme costs increased, although the BCR remains strong; and
- The BCR for the scheme is improved when population growth is assumed on top of underlying demand growth.

The scheme has very little environmental impact with only a **Slight Adverse rating for historical environment.** The scheme has significant social impacts with a **Moderate Beneficial impact on security, journey quality and severance** issues, across the railway and to/from the station. These are important impacts as they measure performance against key scheme objectives and are also essential in preparing for the wider Chippenham Station Hub project. Further detail can be found in the Appraisal Summary Table.

Financial Case

The Financial Case presents evidence of the scheme's affordability both now (for the implementation / construction phase) and in terms of ongoing revenue liabilities (whole life costs).

Scheme costs for both Part A and B of Phase 1 have been estimated from a combination of GRIP 4 design estimate and benchmarked costs from similar schemes elsewhere. In outturn prices Part A is estimated at £1.922m and Part B at £1.196m. A contingency allowance of 10% for Part A and 30% for Part B is allowed to address the specific risk items set out in the scheme risk register. Further detail on the estimate is shown in the table below.

Cost Category	Cost (£m)	
	Part A	Part B
Preparatory (including detailed design and survey work)	0.187	0.072
Preliminaries (including site setup, temporary works, overheads & profit)	0.203	0.124
Main Construction (including utility diversions)	0.568	0.620

Equipment Installation (including gatelines, CCTV and TVMs)	0.646	-
Site Supervision	0.101	0.053
Risk Budget (contingency)	0.171	0.261
Total – Base year prices	1.876	1.130
Inflation	0.047	0.065
Total – Outturn prices	1.922	1.196

The scheme is expected to have the following implications on public accounts:

- **Devolved funding (Local Growth Fund)** is requested to **fund £2 million** (65%) of the scheme implementation costs, with £0.81 million (40%) requested for the 2017/18 financial year and £1.19 million (60%) for the 2018/19 financial year;
- A **private sector contribution of £1.1m** is available from GWR;
- Expenditure during the 2016/17 and 2017/18 financial years, totalling £1.97 million, will be funded initially by GWR with £0.81m being reclaimed from Local Growth Fund during 2017/18;
- Operations and maintenance costs will be funded by GWR and successor franchises; and
- Capital renewal costs will be funded by the rail industry through NR regulated settlements and successor franchises with expenditure on renewal works of key equipment taking place approximately every 15 years.

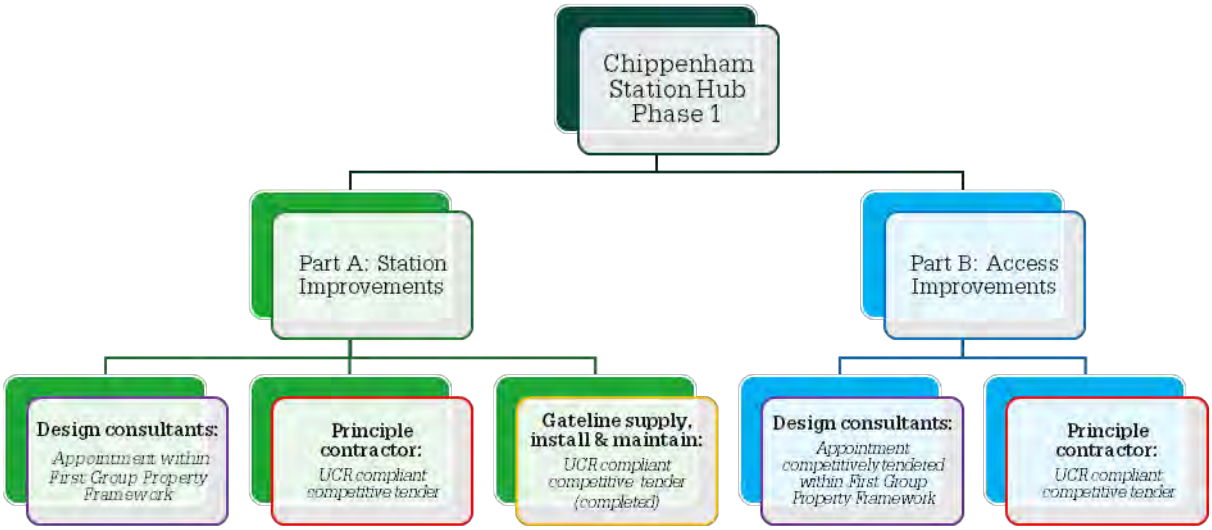
Commercial Case

The Commercial Case sets out the approach to procurement activity on the scheme. All procurement (consultants & contractors) must be in accordance with GWR Procedure SMS-1350-00 – *Procurement and Supplier Management Procedure* – ensuring that procurement is legal, accountable and auditable.

The following issues are relevant to the ongoing procurement considerations:

- The most important criterion is to obtain value for money;
- Local Growth Fund contributions will be fixed, so price certainty is important;
- Due to the constraints on the Local Growth Fund, it is likely that work must be completed and invoiced within specific financial years; and
- Minimising the impact on the travelling public during construction is a priority.

Due to the differing timescales of Part A and B, with Part A able to be delivered as part of the committed GWR gateline project, a separate procurement strategy is required for each. The proposed procurement structure is set out in the diagram over page.



The procurement of the principle contractor in each case will follow GWR procurement policy with GWR's Procurement Department oversees supplier selection following GWR's Procurement Process SMS1350 -12. Construction Contracts will be let under the JCT suite of contracts with First Group/GWR amendments. The Contract for the supply and installation of the automatic passenger gating system will be let to GWR/First Group's specialist term contractor - Cubic Transportation Systems Ltd who have been selected in competition.

Management Case

The management approach that has been proposed for the Chippenham Station Hub Phase 1 Improvements is proportionate to the overall scheme cost, its deliverability and the relatively low level of risk. The key points to note are:

- GWR has extensive experience of delivering similar projects on stations across its network, including works to historic buildings, and is currently engaged in a £65 million portfolio of station property enhancements;
- The Chippenham Station Masterplan Steering Group will oversee the coordination of different projects at the station, providing joint ownership of the programme and risk across these;
- Wiltshire Council will continue to manage reporting to the SW LEP Performance and Delivery Team to ensure coordinated reporting is provided across the different phases;
- The GWR Station and Car Parks Steering Group, comprising senior representatives from key business functions, will oversee scheme delivery. An Executive Sponsor (SRO) and Project Manager will be appointed, with the Project Manager reporting to the Stations and Car Parks Steering Group using a standard scorecard format;
- The project will be delivered in line with the NR Governance for Rail Investment Projects (GRIP) process and GWR's property project management process, which control the progress of the project through key stage gates, providing an effective form of project assurance;

- The Risk Register will be reviewed and updated on a regular basis, with risk owners appointed as appropriate to the type of risk and the stage of scheme delivery at which the risk could be realised;
- A Communications Plan has been prepared to ensure that the public and key stakeholders are kept informed of project progress; and
- The Benefits Realisation, Monitoring and Evaluation Plan will ensure that data collection and reporting is focused tightly on the objectives and success indicators that have been set out in the Strategic Case.

The Chippenham Station Hub Phase 1 scheme could be delivered within 18 months of OBC approval.

The scheme is relatively straightforward to deliver:

- It is expected to be acceptable to the public and stakeholders, given the major customer experience benefits;
- The land required to make the improvements is all within the station lease;
- Planning approval will not be required, but listed building consent will be required and a listed building consent application has been submitted for Part A;
- The risk management process has not identified any major 'show-stopper' risks; and
- Construction is expected to be relatively straightforward, using proven construction techniques and well established suppliers.

Key project milestones are listed in the table below.

Milestones	Estimated Date
Outline Business Case published on SWLEP Website	21 June 2017
Outline Business Case considered by SWLEP Commissioning Group	7 July 2017
Outline Business Case considered by SWLEP Board	19 July 2017
Part A Listed Building Consent	Sept 2017
Part A Delivery contractor appointed	Sept 2017
Part A construction commences	Sep 2017
Part A construction complete	Jan 2018
Part B Listed Building Consent	Aug 2018
Part B construction commences	Aut 2018
Part B construction complete	Early 2019

The Chippenham Station Hub Phase 1 scheme is a deliverable scheme, which will ensure that Chippenham benefits from strategic investment in rail connectivity and that economic growth in Wiltshire is enabled by targeted investment in transport infrastructure.

1 Introduction

1.1 Context

Devolved Funding

On 7 July 2014 the Coalition Government announced the first wave of Growth Deals, providing funds via the Local Growth Fund (LGF) to Local Enterprise Partnerships (LEPs) for projects that support economic growth. Growth Deals bring together infrastructure, housing, and skills funding into a single pot.

Prioritisation work undertaken by the Swindon & Wiltshire Local Enterprise Partnership (SWLEP) during 2014, in line with their published Strategic Economic Plan (SEP), identified a range of projects which would be delivered through the LGF, including the Chippenham Station Hub project, which secured a conditional allocation of £16m through LGF, to be matched by £16m in private investment and £2m of local contributions. Since this time, the project has been designated a 'retained' scheme by the Department for Transport (DfT) and has therefore had more requirements placed on it prior to receiving full grant allocation confirmation.

Chippenham Station Hub

The Chippenham Station Hub project has been in development for several years and was originally conceived to enhance the station facilities and provide increased parking at the site, through multiple, multi-decked car parks. In 2016 funding was released by DfT to allow the preparation of the Strategic Outline Business Case (SOBC) and the opportunity was taken to revisit and build on the original concept to reflect the Wiltshire Core Strategy, emerging Site Allocations Plan Development Plan Document (DPD), and recent planning applications.

The options developed also explored the opportunity to "build in" other improvements, including: public realm improvements by creating a station square; access improvements between the station and the town centre; and to address north south severance issues created by the railway. An Outline Business Case for the wider Station Hub scheme will further refine these proposals in 2017, and will result in the development of a viable, deliverable option which addresses the scheme objectives.

In the mean-time Great Western Railway (GWR) has developed an opportunity for early delivery of station and access improvements by combining them with its planned gateline project *(a franchise commitment to deliver ticket barriers at the station by the end of 2017)* to create a Chippenham Station Hub Phase 1 scheme. This would secure the early delivery of regeneration outcomes at the station alongside the introduction of Intercity Express Trains, provide spend of LGF funding, provide private sector match funding, demonstrating a commitment to delivery, and enable the full regeneration of the Chippenham Station Hub scheme to follow in an appropriate phased manner.

The principle of a Phase 1 scheme with early release of a part of the LGF funding has been agreed by DfT, with confirmation also secured that the Phase 1 scheme would not be treated as a retained scheme. Approval was secured from SWLEP Board on 25 January to bring forward this Outline Business Case and, if approved, to recommend the release of the funding for Phase 1 from DfT.

Approvals Process

The process by which the Chippenham Station Hub Phase 1 is approved for funding by the LEP follows the SWLEP Assurance Framework[1]. This process is illustrated in the below diagram. A proportionate approach to appraisal has been adopted by this OBC and is set out in the Appraisal Specification Report.

1.2 The Scheme

Scheme Overview

A number of specific measures are proposed in two parts:

Part A:

- Gatelines to all station entrances with a manned gateline on the disused main platform and remote operated gatelines in the north car park and on the public footbridge across the railway (allowing access to the lift to the operational platforms);

Franchise commitment

- New booking hall with a new entrance onto the frontage and significantly improved customer experience within the hall; and
- Improved retail unit providing a high quality space for the existing café with frontage onto the proposed station square *(part of the Hub project).*

LGF funded

Part B:

- Access improvements on both sides of the station including:

[1] The SWLEP scheme approval process and business case requirements are set out in the Swindon and Wiltshire Local Enterprise Partnership Assurance Framework, March 2015.

- A new north side lift onto the public footbridge, providing step free access across the railway as well as to platforms from the north side;
- Public realm, walking and cycle improvements on the south side including additional cycle parking, an 8 bay docking cycle hire station *(to be delivered early alongside Part A)*, wayfinding signage and surface treatments; and
- Improvement works to the bus interchange/turning point within the station forecourt.

LGF funded

The general arrangement of the improvements is shown in Figure 1. Design drawings for Part A are contained in Appendix 5.

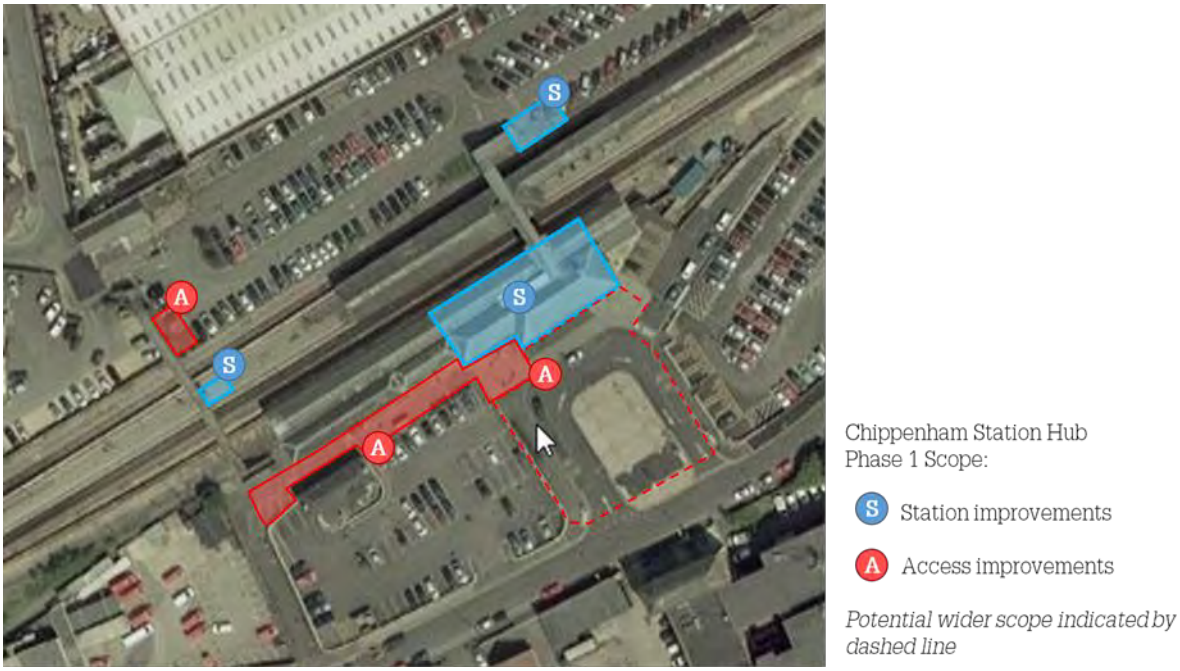


Figure 1 Chippenhan Station Hub Phase 1 Scope

This Chippenham Station Hub Phase 1 proposal closely aligns with the objectives for the wider and subsequent phases of the Chippenham Station Hub scheme.

The below strategic and operational objectives were developed as part of the production of the Strategic Outline Business Case for the wider scheme. The objectives that align with and will contribute to the Chippenham Station Hub Phase 1 scheme have been highlighted (in green) below.

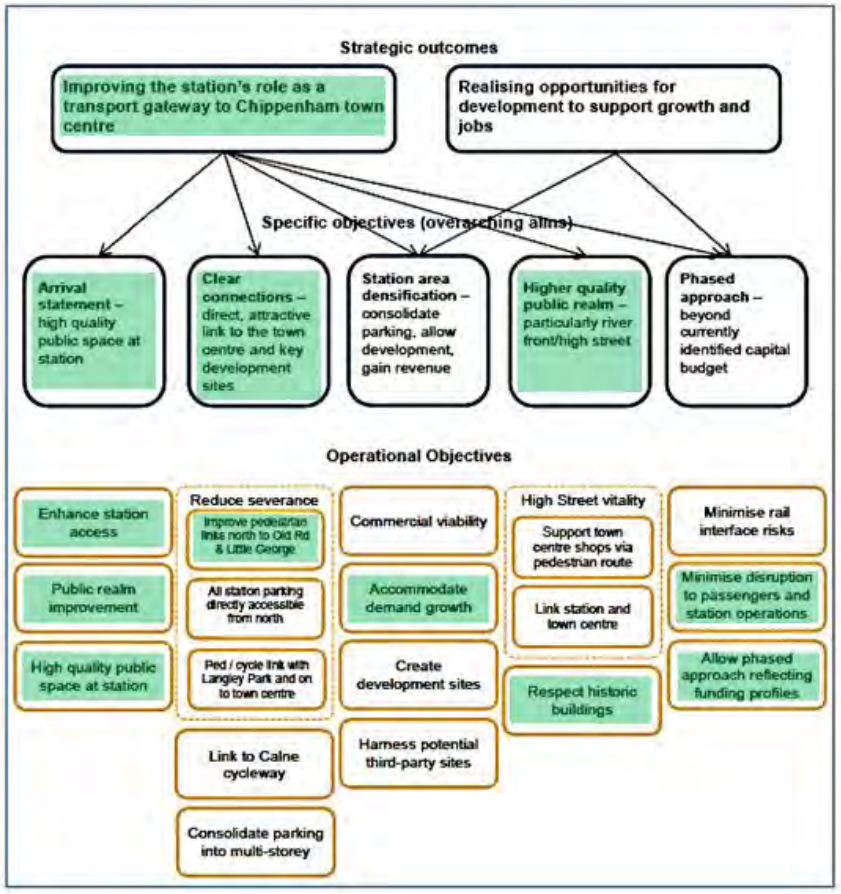


Figure 2 Chippenham Station Hub strategic and operational objectives

Further detail on this alignment is included in the below table:

Table 1 Phase 1 alignment with wider Chippenham Station Hub scheme

Output	Alignment
Gatelines to all station entrances	Manned and remote gatelines will support improving the customer experience and security at the station, helping to minimise disruption to passengers and station operations.
New booking hall with a new entrance onto the frontage	The current layout at the station results in a poor quality arrival experience, particularly in the booking hall in both directions with pinch points causing pedestrian congestion. With usage of the station forecasted to increase significantly, these planned improvements will be crucial in accommodating demand growth. The improvements to the accessibility and operation of the entrance hall will enhance station access, respect historic buildings, improve the arrival statement, and minimise disruption to passengers and station operations by addressing known pedestrian congestion/pinch points.

Improved retail unit with frontage onto the proposed station square	Providing a high quality space for the existing café with frontage onto the proposed station square is a required output of the Chippenham Station Hub scheme. This improvement will; provide a high quality public space at the station, the arrival statement will be improved as a result of creating new active frontage, and will help maintain and respect historic buildings at the station.
New north side lift onto the public footbridge	The new lift will enhance station access and provide clear connections to the station facilities. This addition will be essential in helping to reduce severance that the railway line creates, as it will improve pedestrian links north to Old Road and Little George.
Inclusion of a bike hire facility	The inclusion of a Brompton bike hire facility will provide additional sustainable transport options at the station, therefore improving the station's role as a transport gateway to Chippenham's town centre.
Urban realm, walking and cycle improvements on the south side	Urban realm, walking and cycle improvements on the south side will address numerous specific and operational objectives, including improving the arrival statement by helping to create an upgraded public space at the station. Walking and cycle improvements will help to enhance the sustainable transport options available at the station, and strengthen cycle-rail integration. Wayfinding will help improve permeability of routes to the town centre.
Potential improvement works to the bus interchange	Potential improvements work to the bus interchange which may be able to form part of these Phase 1 works will address known congestion problems, effectively helping to minimise disruption to passengers and station operations.

Scheme Costs

The total estimated implementation costs of the proposed options (outturn prices assuming completion in 2018/19), including preparatory works, site supervision costs and a quantified risk budget, are:

- Part A: Gatelines *(funded by GWR as a franchise commitment)* and station facility improvements: £1.9 million (outturn price)
- Part B: Access improvements: £1.2 million (outturn price)

The Initial Benefit-Cost Ratio (BCR) is 4.11. Further details are provided in Section 3, the Economic Case.

Scheme Benefits

The headline benefits of the proposed scheme are:

- Significant revenue benefits to central government from increased demand attributable to journey quality impacts associated with improved customer experience and security;

- **Reduced severance across the railway and improved access to facilities** for mobility impaired users resulting from the additional lift and improved cycle-rail integration;
- **Improved security for station users** from restricting access to platforms for non-rail users, increased staff presence and a general increase in footfall around the station; and
- **Catalyst for wider regeneration** (following the case study at Exeter Central) through improved security, retail, accessibility, and customer experience helping strengthen footfall around the station; and
- **Enhanced overall journey experience** – by improving end to end trip making through cycle-rail integration.

1.3 Document Purpose

This document and its appendices form the Outline Business Case (OBC) for the first phase of improvements to Chippenham Station. This OBC represents Stage 1 of the SWLEP agreed 'business case development' process. The SWLEP will use the OBC, combined with an Outline Business Case Assessment Report from the Independent Technical Advisor, to decide whether the scheme should be approved to progress through to Stage 2 – Full Business Case and Funding Agreement.

1.4 Document Status

This OBC is intended for review by the Independent Technical Advisor, and submission to the SWLEP. It is expected that this document will also be published on the SWLEP website. Approval to contract will be subject to FirstGroup and GWR approvals on terms to be agreed between the parties.

1.5 Document Structure

This FBC is structured around the DfT's recommended five cases model for a Transport Business Case:

- **Strategic Case** (Section 2), setting out a clear rationale for the first phase of Chippenham Station improvements, the need for investment in this location, and the scheme options under consideration;
- **Economic Case** (Section 3), identifying the key economic, environmental and social impacts of the scheme and its overall value for money;
- **Financial Case** (Section 4), presenting evidence of the scheme's affordability both now (for the construction phase) and in terms of ongoing revenue liabilities. This section includes scheme outturn cost details;
- **Commercial Case** (Section 5), summarising the preferred approach to scheme procurement and justifying the commercial and legal viability of such an approach; and
- **Management Case** (Section 6), setting out how Great Western Railway will ensure that the scheme is delivered successfully – on time and to budget, with suitable governance and risk management processes in place.

2 Strategic Case

2.1 Overview

This section sets out the 'case for change', by explaining the rationale for making an investment and presenting evidence on the strategic policy fit of the proposed scheme. This section also sets out the scheme options under consideration

The Strategic Case establishes the:

- Context for the business case, outlining the strategic aims and responsibilities of GWR and Wiltshire Council;
- Transport-related problems that have been identified, using evidence to justify intervention and examining the impact of not making the investment;
- Specific, Measurable, Achievable, Realistic and Time-bound (SMART) objectives that solve the problem;
- Measures for determining successful delivery of the objectives;
- Scheme scope, determining what the project will and will not deliver;
- Breakdown of interdependencies on which the successful delivery of the scheme depends;
- Details of main stakeholder(s); and
- Evaluation of the options considered.

2.2 Business Strategy

The Rail Industry – GWR and Network Rail (NR)

Chippenham rail station is own by NR and operated by Great Western railway (GWR) along with all train services serving the station. GWR recognises the needs and benefits of redeveloping Chippenham rail station to accommodate future growth within Chippenham town centre.

GWR, has a significant programme of investment within its current franchise to 2019 (or 2020 should the Department for Transport take up to a 13 period optional extension) being delivered in partnership with Network Rail through the Western Programme Alliance. This will deliver the Department for Transport's commitment to the complete modernisation of the Great Western route through major projects including new trains, electrification and Crossrail.

This joint investment, by NR and GWR, is the largest investment in our railway since the Victorian era. It includes the electrification and renewal of signalling by NR and introduction of new Intercity Express Trains by GWR as well as a range of station investment. This will allow GWR to launch a major service improvement providing more frequent trains and faster journey times from the end of 2018. This will be complemented by the completion of Crossrail in 2019,

and subsequently Western Access to Heathrow, providing radically faster links from Chippenham to the City of London, Docklands and Heathrow Airport for residents and businesses.

Figure 3 Great Western Modernisation

A summary of this strategic investment across the rail industry includes:

- New Intercity Express Trains providing up to 24% more seats on each train and improved customer experience including more tables, greater leg room and improved customer information systems
- Typical journey times of 63 minutes between Paddington and Chippenham with fastest trains taking only 57 minutes
- 74 trains per day between Paddington and Chippenham, an increase of 10 from today, with 3 trains per hour in peak hours
- 16000 additional seats each day on trains through the station, an increase of 46%
- Major station improvements at Paddington, Reading (completed in 2014), Didcot, Bath Spa and Bristol Temple Meads to reduce congestion and improve access, including through the installation of ticket gatelines at Chippenham itself.

Plans are in development with stakeholders to build on this investment with further improvements to infrastructure on the route, identified through the Western Capacity

Improvement Programme, additional peak capacity and redevelopment of Swindon station (part of the wider Swindon Town Centre regeneration plans).

Investment at Chippenham station, building on the commitment to deliver the gatelines, aligns with this strategy improving customer experience and capacity at stations so that they may act as gateways between the communities they serve and the strategically significant rail corridor.

Department for Transport

Central government acknowledges the wider economic benefits, in terms of achieving regional growth and productivity targets, of redeveloping Chippenham rail station.

A redevelopment project to enhance the station facilities and provided increased parking at the site, through multiple, multi-decked car parks built on top of the existing car-parking at the station, was submitted to Government in March 2014 as part of the Swindon and Wiltshire Growth Deal bid. This project was successful in securing £16 million of investment from the government.

Since this time the project has been 'retained' by the Department for Transport (DfT) and has therefore had more requirements placed on it prior to receiving full grant allocation confirmation. Key to these requirements is the development of a compelling business case which takes in to account the methodologies for Business Case development used by central government and clearly shows economic impact and benefit.

Despite the above status, DfT have acknowledged the wider economic benefits of the project, and have agreed that the business case should be prepared considering sustainable economic growth and urban regeneration aspects (utilising HM Treasury Green Book principles) alongside potential transport impacts and improvements (utilising DfT WebTAG).

Swindon and Wiltshire Local Enterprise Partnership

The Swindon and Wiltshire Local Enterprise Partnership (SWLEP) was established in July 2011. SWLEP is a partnership between the two local authorities (Swindon Borough Council and Wiltshire Council) and businesses.

SWLEP plays a central role in determining local economic priorities and undertaking activities to drive economic growth and creation of local jobs. SWLEP accesses government funding, channelling investment into the region that will leverage even greater funding from private investors.

Wiltshire Council

Wiltshire Council, as a unitary authority, is the Local Planning Authority and the Local Highway Authority. As promoter for the wider Chippenham Station Hub scheme, its key local plans and policies for economic growth, spatial planning and transport guide decisions on transport infrastructure investment, including any proposals for Chippenham Railway Station. These plans and policies are contained in the:

- SWLEP Strategic Economic Plan (March 2014 & refresh in January 2016)

- Wiltshire Local Transport Plan 2011-2026 (LTP3) (March 2011)
- Wiltshire Core Strategy (adopted January 2015), which includes the Chippenham Area Strategy, as well as the associated Chippenham Site Allocations Plan (CSAP)
- Development Plan Document and draft Chippenham Transport Strategy refresh
- Chippenham Masterplan

Any scheme that is related to improvements at Chippenham Railway Station must align with these plans, the relevant aspects of which are presented in Table below.

Table 2 Planning Policy Documents

Policy	Details
Wiltshire Local Transport Plan 3 (LTP3)	The overarching LTP3 vision is 'to develop a transport system which helps support economic growth across Wiltshire's communities, giving choice and opportunity for people to access essential services' In supporting economic and development growth, Phase 1 of the Chippenham Station Hub project will contribute to meeting the following strategic objectives in the LTP: SO1 – to support and help improve the vitality, viability and resilience of Wiltshire's economy and market towns; SO2 – To provide, support, and/or promote a choice of sustainable transport alternatives including walking, cycling, buses and rail SO5 – to improve sustainable access to a full range of opportunities particularly for those without access to a car SO6 – to make the best use of the existing infrastructure through effective design, management and maintenance; SO12 – to support planned growth in Wiltshire. SO18 - To enhance the journey experience of transport users
Wiltshire Core Strategy (adopted January 2015) and associated draft Chippenham Site Allocations Plan (CSAP) Development Plan Document	Chippenham is identified as one of three Principal Settlements in Wiltshire and is therefore a primary focus for development (employment and housing) growth. Overall, the strategy makes provision for at least 26.5ha of employment land in the Chippenham Community Area. A further key challenge is to provide a sufficient number of new homes, with at least 4,500 planned for Chippenham in the 2006-2026 period. Development growth will need to be supported by necessary improvements to infrastructure. In supporting economic and development growth, Phase 1 of the Chippenham Station Hub project will contribute to meeting the Following Core Policies: Chippenham is identified in the Core Strategy as a 'Principal Settlement' (**Core Policy 1**) because it is *'a strategically*

	important centre and primary focus for development', alongside Trowbridge and Salisbury. Core Policy 9 identifies Chippenham Central Areas of Opportunities (see Figure 4-1). Core Policy 9 identifies that *'the redevelopment of the following sites will be supported:* ▪ Bath Road Car Park/Bridge Centre Site - to form a retail extension to the town centre to provide a supermarket and comparison units; and ▪ Langley Park - to deliver a mixed use site solution for a key redevelopment opportunity area to support the retention of significant business uses on part of the site.' Core Policy 10 outlines the Spatial Strategy for Chippenham Community Area. The Policy *states 'development in the Chippenham Community Area should be in accordance with the Settlement Strategy set out in Core Policy 1'.*
Draft Chippenham Transport Strategy (2015 refresh)	Chippenham Station Hub Phase 1 is a key component of achieving the following draft Chippenham Transport Strategy objective: ▪ Objective 1: Deliver a transport network for Chippenham that can support planned growth at development sites and minimise the impact of increased travel demand on existing residents. ▪ Objective 6: Support sustainable access to the town centre, railway station, healthcare facilities, employment, training and social opportunities across Chippenham, by delivering and promoting a transport network which makes walking, cycling and travelling by bus a safe and convenient option for shorter distance journeys.
Chippenham Masterplan	The Masterplan area comprises the Chippenham Central Area of Opportunity as set out in Wiltshire Core Strategy CP9. This includes: ▪ the town centre ▪ nearby major regeneration opportunities ▪ central transport routes that may be significantly affected by strategic growth the central section of the River Avon corridor. In relation to the Railway Station, the Masterplan states: The railway station is a major benefit to the town centre although the public realm should be improved to make them more appealing arrival points to the town with improved provision and visibility of pedestrian routes to the town centre The railway station located close to the town centre will benefit from improved accessibility, links, and wayfinding to the town centre.

	Create new railway crossing with multi-level car park, including a pedestrian route from Langley Park to the Cocklebury area to accommodate increased passenger numbers and town centre users

2.3 Problems identified and impacts of not changing

A range of problems exist with the station at Chippenham including large surface car parks impacting on the townscape, inadequate station facilities and interchange and poor access from north of the railway by both pedestrian and vehicle. These can be addressed by the wider Chippenham Station Hub project. However, more specific problems have been identified at the station that Phase 1 seeks to address. These include:

- Facilities provide a poor quality arrival experience in the booking hall in both directions with pinch points causing pedestrian congestion;
- Inadequate arrangements for the retail provision limits the role of the café particularly in providing external provision;
- Inadequate station security fails to control fare evasion, leading to loss of revenue to the train operator and central government, and creates a generally less pleasant station environment *(to be addressed by franchise commitment to install gatelines);*
- Lack of step free access from the north side of the railway. This restricts access to the station, and the access to services it represents, and causes major severance for mobility impaired users; and
- Significant growth in demand, resulting from the major service improvements and population growth, will result in the above issues becoming more acute.

These problems can be summed up by the statement that **Chippenham Station does not currently fulfil its role as a gateway** to the town adequately. It **does not provide a high quality arrival experience**, neither showcasing the towns heritage or its economy, it provides an **inadequate customer experience** and **access remains restricted**, especially from the north.

A range of other problems in the area around the station were identified for the wider Chippenham Station Hub scheme, which the Chippenham Station Hub Phase 1 will work towards, but not directly address, including:

- The rail lines that bisect the town and the significant traffic congestion that occurs at the major crossings present a real barrier to movement between the town and outer residential areas and leisure facilities. This severance issue contributes to the current perception of the railway station and nearby areas being 'out of town';
- There is an evident lack of car parking provision at the station, resulting in congestion and overspill onto local streets. This is anticipated to exacerbated by future growth in patronage;
- The area around the railway station is currently significantly under-utilised – the area is dominated by surface car parks and vacant or under-used buildings;

- Rail demand growth is expected following the electrification and upgrade of the Great Western Main Line between London and Bristol, which will have a direct impact on passenger numbers using Chippenham station. The facilities, access and parking at the station are already under strain; and
- The planned housing growth in Chippenham of 4,500 homes by 2026 as detailed by Wiltshire's Core Strategy, January 2015) will further boost rail demand in the town, putting more strain on the station and services.

Impact of not changing:

As growth and development takes place in Chippenham, coupled with the electrification of the mainline to London from Chippenham, usage of the Railway Station is forecast to increase significantly. Lack of investment in delivering improvements to the Railway Station area at Chippenham, will lead to continued issues with severance, access and security and therefore has the potential to constrain this growth and the resulting mode shift and decongestion.

2.4 Objectives

In order to solve the specific problems outlined above for Phase 1, six SMART objectives for the Phase 1 improvements to Chippenham station have been identified. These include baseline objectives to deliver against the franchise commitment to install gatelines and additional objectives to address the other problems identified for Phase 1. Strong progress against all six objectives is expected by 2019/20, one year after scheme opening:

1. Improve station security through restricted access and greater staff presence;
2. Improve revenue capture and reduce rate of ticketless travel through the regulation of access to ticket holders;
3. Reduce severance across the railway through provision of step free access on the north side;
4. Provide improved accessibility at the railway station by delivering an enhanced ticket hall and improved café/retail facilities;
5. Improve accessibility to/from the station with cycling improvements and a cycle hire facility; and
6. Increase customer satisfaction with an enhanced ticket hall, improved café/retail facilities and enhanced station security.

2.5 Measures for success

For each objective set out in section 2.4 at least one 'indicator of success' has been established to determine what constitutes successful delivery of any transport-related improvements. Indicators and related targets are outlined in Table 3.

Table 3 Measures of success against the SMART objectives for Phase 1

Indicator	Targets	Relating to Objective

Increase customer satisfaction measure[2] (CSM) score for staff availability and security	CSM scores improved to: Availability of staff – 7.5 Personal security – 8.4	Improve station security through restricted access and greater staff presence
Reduction in the recorded rate of ticketless travel	Reduce rate of ticketless travel by 75% *(pre & post scheme revenue protection blocks to be carried out)*	Improve revenue capture and reduce rate of ticketless travel through the restriction of access to ticket holders
Increase rail patronage	Increase station footfall in line with forecasts *(based on recorded ORR station usage data)*	
Increase mobility impaired users using AfA bridge from north side of the tracks	Recorded usage of new lift Increased usage of existing lifts *(pre & post scheme monitoring)*	Reduce severance across the railway through provision of step free access on the north side
Increase customer satisfaction measure score for ticket buying and other station facilities	CSM scores improved to: Ticket buying facilities – 8.0 Other station facilities – 7.0	Provide improved accessibility to the railway station by delivering an enhanced ticket hall and improved café/retail facilities
Increase rail patronage	Increase in station footfall in line with forecasts	
Increase rates and mode share of cycling to station	Increase cycle rates by 10% and increase mode share to 5%	Improve accessibility to/from the station with cycling improvements and a cycle hire facility
Increase customer satisfaction measure score for overall station environment, ticket buying and other station facilities	CSM scores improved to: Overall station environment – 7.9 Ticket buying facilities – 8.0 Other station facilities – 7.0	Increase customer satisfaction with improved station facilities, and enhanced station security

2.6 Scope

The scheme comprises both station and access improvements with the following broad scope.

[2] Customer Satisfaction Measure (CSM) is a customer survey undertaken by GWR to gain insight into current customer satisfaction.

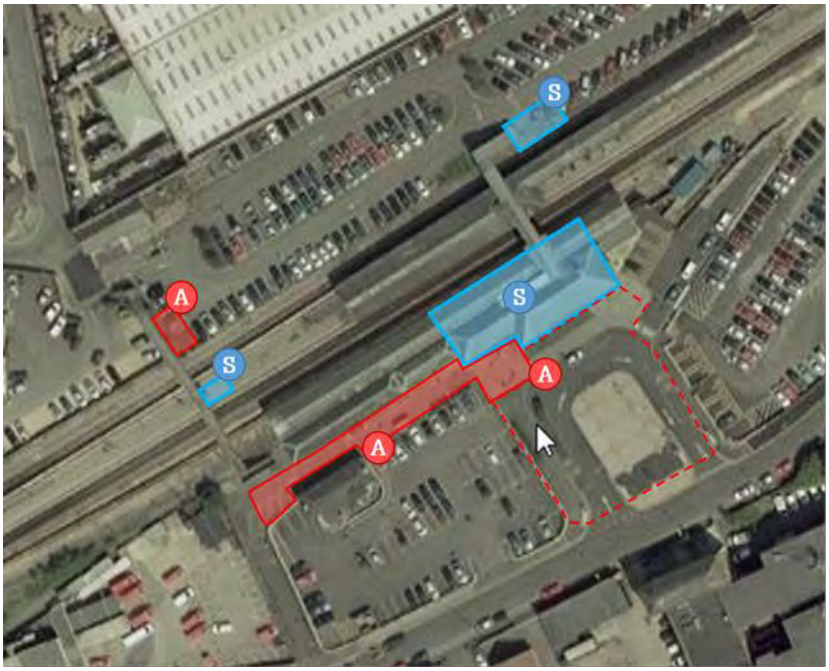


Figure 4 Chippenham Station Hub Phase 1 Scope

Part A – station improvements:

- Gatelines including barcode, ITSO and cEMV readers to all station entrances:
    - Manned gatelines with one wide aisle and two normal gates allowing access from the disused platform and booking hall;
    - Remote operated gateline with one wide aisle and one normal gate in the north car park in a new covered entrance at the bottom of the heritage footbridge; and
    - Remote operated gateline with one wide aisle and one normal gate with a new ticket vending machine and canopy on the public footbridge across the railway providing access to the lift and steps to the operational platforms (through access across the railway will remain unaffected).

Franchise commitment

- New booking hall with a new entrance providing improved frontage onto the proposed station square (part of the wider Station Hub scheme) and significantly improved customer experience within the hall:
    - A larger booking hall with greater circulation space, reduced pedestrian congestion and additional entrance on the frontage;
    - New ticket windows providing better customer experience;
    - Relocated ticket vending machines;
    - Improved customer information, CCTV and supporting systems; and

LGF funded

- Restoration of heritage features in the booking hall including original wooden panelling.

- Improved retail unit providing a high quality space for the existing café with frontage onto the proposed station square (part of the full Station Hub scheme):
  - New café facilities providing improved customer experience; and
  - Segregated facilities allowing access to the café from both the platform (ticket holders) side and public side of the station.

LGF funded

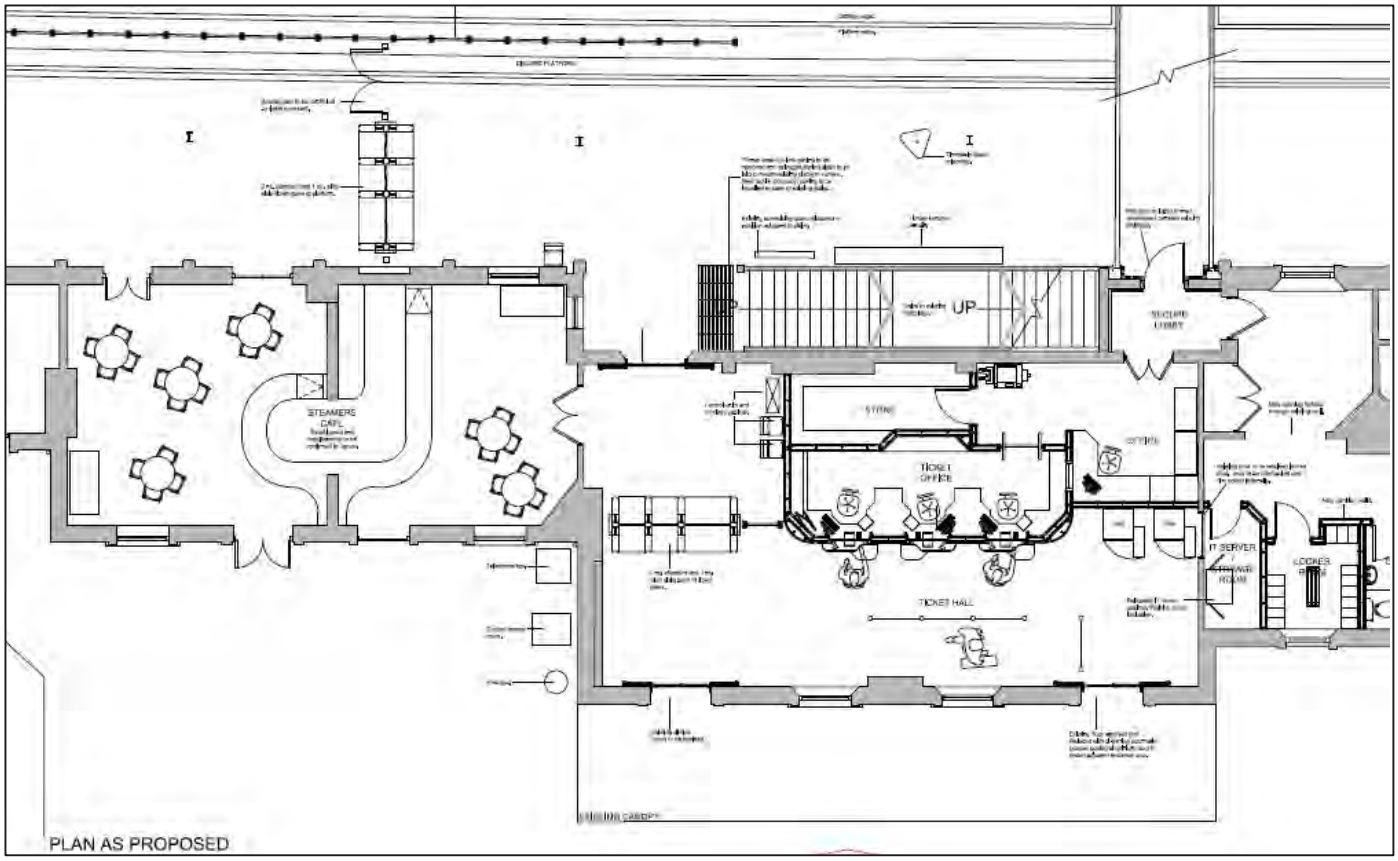


Figure 5 Station improvements: booking hall and café

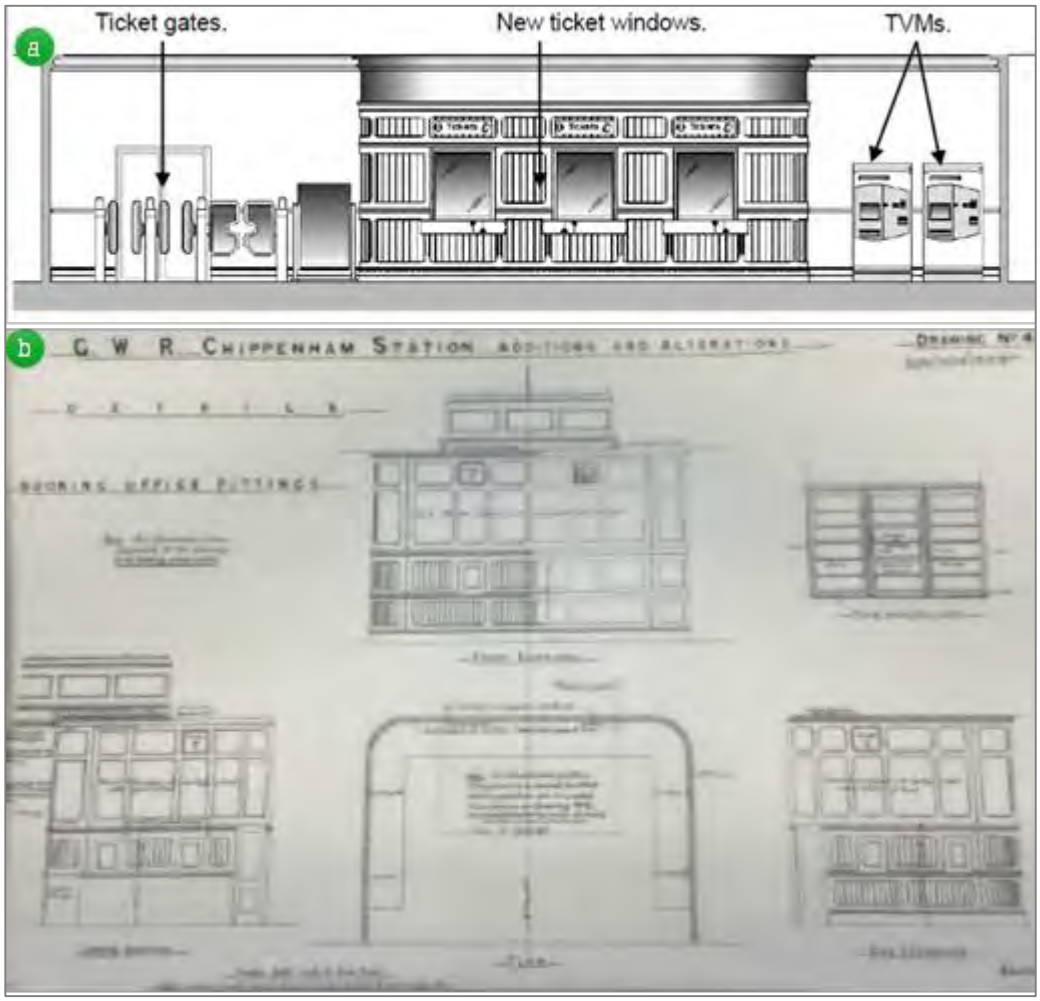


Figure 6 a) Booking office heritage details; b) Historic booking office plans (around 1900)

Part B – access improvements:

Access improvements on both sides of the station

- A new north side lift onto the public footbridge – completing the access for all bridge which provided lifts on the south side and the operational platform but made only passive provision for one on the north side – providing step free access across the railway and to the station itself platforms from the north side;
- Public realm, walking and cycle improvements on the south side including additional cycle parking, an 8 bay docking cycle hire station *(to be delivered early alongside Part A)*, wayfinding signage and surface treatments; and
- Improvements to the transport interchange to address known congestion and pinch points.

LGF funded

Relationship with the wider Station Hub project

The scope for Phase 1 aligns with the wider Station Hub project as set out in the introduction. In principle, Phase 1 will deliver improvements either on or immediately adjacent to the station and future phases of the Station Hub scheme will then redevelop the surrounding car parks and wider area. It will thus not lead to any abortive work but instead seeks to provide early delivery of certain outputs and commence the phased delivery of the wider scheme.

2.7 Current opportunities and constraints

With significant housing and employment development planned for Chippenham in the coming years, a great opportunity exists to deliver improvements at the Railway Station and maximise the potential for economic growth in the area. The development should act as a catalyst to address existing issues before capacity is further exceeded.

Phase 1 by its very nature is designed to seize the opportunity for early delivery of elements of the Chippenham Station Hub scheme. Other opportunities exist in relation to the delivery of surrounding developments but these will be addressed through the wider Station Hub scheme

At the same time a number of constraints impact on the project:

- Adherence to rail industry regulatory processes
- Adherence to GRIP process and approval of designs by NR asset management team
- Management of project delivering around interfacing NR projects
- Adoption of sympathetic approach to listed buildings (to secure listed building consent)
- Installation of gatelines by December 2017 in accordance with franchise commitment
- Negotiation of acceptable funding terms between SW LEP and GWR (subject to the requisite FirstGroup and GWR approvals)
- Agreement of final retail arrangements with tenants

2.8 Interdependencies

As stated in section 1.2 ‘The Scheme’, this Chippenham Station Hub Phase 1 proposal closely aligns with the objectives for the wider and subsequent phases of the Chippenham Station Hub scheme. The successful completion of phase 1 will support the delivery of the wider scheme by effectively preparing station facilities to accommodate the forecast increase in usage.

By separating the Chippenham Station Hub project into phases will enable developments to come forward in a co-ordinated and organised manner.

Other existing rail industry projects at the station provide further interfaces which are being managed through a short term Coordination Group. A particular issue that is being managed is the temporary closure of the historic station footbridge while it is raised, which will restrict when the additional north side gateline can be installed. Notable interfacing projects include:

- Raising of the historic station footbridge for electrification (NR)

- Platform extensions for Intercity Express Trains (NR)
- Electrification works to install the OLE system, including structures and catenary (NR)
- Renewal of ticket vending machines (GWR)

Within the project a number of key interdependencies also apply:

- Listed building consent (application submitted)
- LEP business case approvals (OBC submitted)
- LEP funding agreement (critical path)
- Station change (ongoing)
- NR design approvals (ongoing)
- GWR expenditure authority (complete)

The completion of each of these is essential to allow contract award for Part A, albeit GWR is proceeding at risk on the Business Case and funding agreement due to the need to complete the gateline installation by December 2017. For Part B none of these items are on the critical path and it would be preferable to considered a staged approach to the completion of the full business case and funding agreements to allow Part A to proceed in advance of Part B.

2.9 Stakeholders

A wide variety of stakeholders exist in Chippenham for this project. These include:

- Wiltshire Council (members and officers)
- Network Rail
- Department for Transport
- Swindon & Wiltshire LEP
- TransWilts CRP
- Chippenham Town Council
- Michelle Donelan MP
- Tenants
- Bus / taxi operators
- Customers / public
- Station staff
- Chippenham Business Improvement District

These stakeholders have quite different priorities, interests and levels of influence. For example, customers have a high degree of interest and a focus on high quality finishes and minimal disruption whereas Network Rail has greater influence but is primarily interested in the maintainability and whole life cost of improvements. To provide insight to the overall interest and influence of stakeholders, in support of the stakeholder management plan, a mapping exercise has been undertaken and this is show in figure 7.

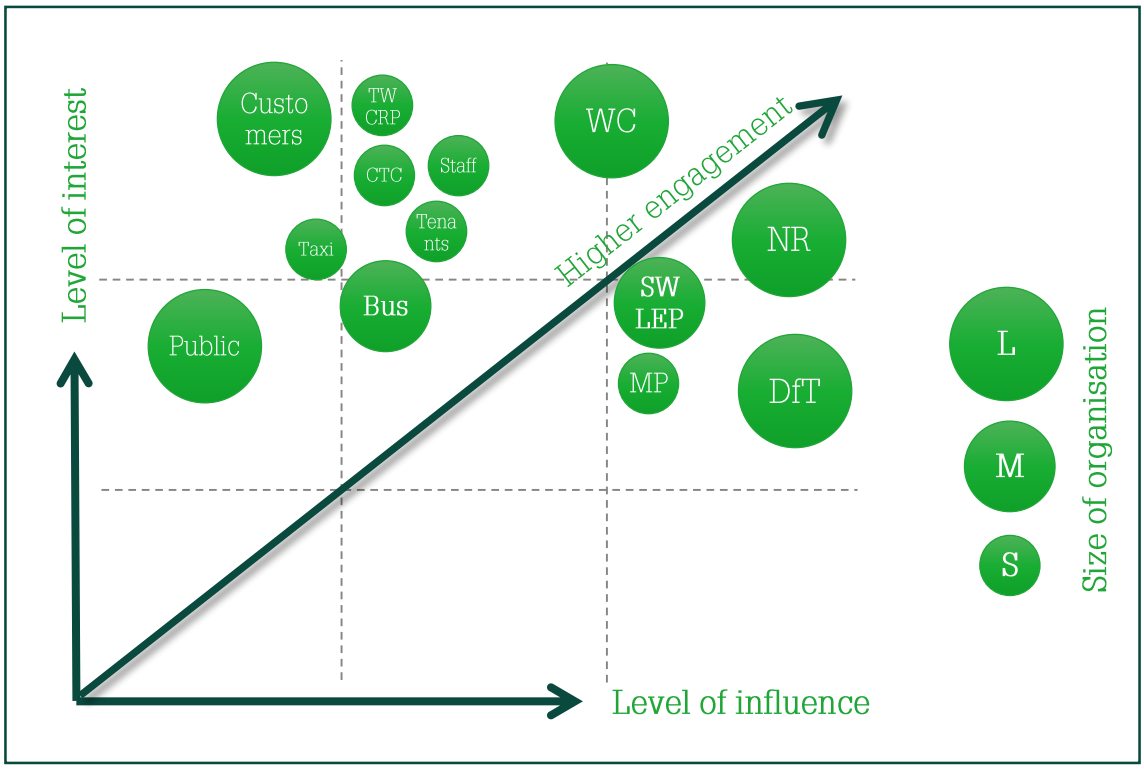


Figure 7 Stakeholder mapping exercise

Extensive engagement has taken place with these stakeholders with more engagement planned. This has taken a variety of forms including presentations, written correspondence, meetings and drop in sessions. Further activity is planned notably with customers and staff and this is summarised in table 4.

Table 4 Stakeholder engagement activity

Stakeholder	Engagement	Comments
SWLEP Board	A presentation was delivered to the SWLEP Board on the 25 January 2017 outlining the scheme and alignment to the Chippenham Station Hub project	The SW LEP was supportive of the opportunity for early improvements to begin delivery of an improved gateway.
Michelle Donelan MP	The scheme was presented to the Member of Parliament for Chippenham (Michelle Donelan) on the 2 February 2017. Further update meetings are planned.	The Phase 1 scheme provides early delivery of components of the Phase 1 scheme which Michelle Donelan has been a key supporter of.
Wiltshire Councillors	The scheme was presented to Area Board Councillors on the 9 February and to the whole Area Board and members of the public on the 13 March 2017. As the scheme is progressed the detailed design and construction plans will be presented and future meetings. An update will be provided to the Area Board on the 26 June 17.	Wiltshire Councillors will continue to be kept closely involved but it is believed that strong support exists for the improvements to severance and access, along with the improved arrival experience, which are important issues identified in the Chippenham masterplan.
Wiltshire Council Officers	The scheme has been worked up collaboratively with the Wiltshire Economic Development team who have also brought in transport officers as appropriate. Engagement is also ongoing with	Wiltshire Council Officers are promoting the full Station Hub project. GWR is working in partnership with them on the

	conservation officers over the listed building consent process.	Phase 1 proposals, which are very much a joint opportunity.
Department for Transport	The scheme proposals have been presented to DfT in its roles as both franchising authority and in relation to the retained scheme funding.	DfT as franchising are supportive of bringing forward the proposals alongside the committed gatelines as a Phase 1 to the full scheme. DfT has agreed to the release of the funding for Phase 1 subject to this OBC being approved by SW LEP.
Network Rail	The scheme has been worked up collaboratively with Network Rail colleagues through the Western Alliance. Engagement is also ongoing at a technical level through the asset protection process with NR asset teams to agree technical and construction details.	NR are working in partnership with GWR through the Western Alliance to secure investment and upgrade our railway.
TransWilts CRP	The scheme proposals have been presented to the Chair of the TransWilts CRP through the Chippenham Station Hub Steering Group. GWR has also presented the proposals subsequently to the CRP in its regular progress meetings.	TransWilts CRP are extremely supportive and see the scheme, and the full Station Hub project, as key improvements towards their aspirations to develop the Swindon – Westbury – Salisbury rail corridor.
Bus / taxi operators	As the details are progressed for the access works transport operators will be briefed them on the plans and any particular issues addressed.	Bus/taxi operators are expected to be supportive as the scheme will provide modest enhancements to interchange.
Tenants	The project team has been working with the existing tenants at the station to agree the scope and design of the scheme. This will continue with regular updates with the tenants to ensure their needs are met and plans coordinated.	The existing tenant at the station is supportive and has been involved in developing the scope. This include developing temporary arrangements to continue to provide facilities for customers during the works.
Customers / public	The scheme was presented to members of the public at the Area Board on the 13 March 2017. An update to the Chippenham Area Board is planned for the 26 June 2017. A public drop in session, website information and station information displays are all in progress.	Comments on the phase 1 scheme have been positive from those consulted, especially in relation to the provision of the northern lift platform access
Staff	The project team is working with the station manager to secure the involvement of colleagues in the design and delivery of the project.	Staff are supportive as the scheme will deliver significant improvements to staff and customer facilities

2.10 Options

The Chippenham Station Hub Phase 1 scheme has arisen from the opportunity to deliver additional improvements alongside the GWR gateline scheme as an early phase of the wider Chippenham Station Hub scheme.

By its nature therefore, arising from a specific opportunity rather than a blank canvas, the options for the scheme are limited. However, prior to selecting the preferred scheme broadly three options were available. These were to proceed with the GWR scheme in isolation; to seek to deliver the station and access improvements without the gatelines or to deliver the proposed combination of station and access improvements. A fourth option was of course to do nothing.

These options are set out in table 5 which compares the alignment of each option with the stated objectives for the Phase 1 scheme set out previously. It is evident that to do nothing was

not an option as GWR has a franchise commitment to deliver the gatelines. Similarly to deliver the station and access improvement without the gatelines is not a realistic option at this point. Alternately the Phase 1 scheme could be delivered at a later date with just these components but this would miss the opportunity for early and efficient delivery.

As a consequence, the only two real options available were to proceed with the proposed station and access improvements or to proceed with the gatelines only. The proposed station and access improvements scheme provide significantly more alignment with the objectives, unsurprising as they were developed with these in mind. In contrast the gatelines only would miss a significant number of opportunities to overcome severance and access issues at the station.

It is therefore clear that the proposed station and access improvements align well with the stated objectives, significantly better than alternative options, and reviewing the different options it is demonstrated why it was selected as the preferred scheme.

Table 5 Chippenham Station Hub Phase 1 option assessment summary

Option		Alignment with Phase 1 objectives						Comments
		1	2	3	4	5	6	
1	Do nothing	x	x	x	x	x	x	GWR has a franchise obligation to deliver the gatelines and this option is therefore not viable.
2	Gatelines only	✓	✓	x	x	x	~	GWR could proceed with the gatelines only but this would miss the opportunity to undertake station and access improvements as early deliverables of the hub project and would likely require compromises to install the gatelines. This is therefore considered not to be desirable.
3	Access and station improvements only	x	x	✓	✓	✓	~	GWR has a franchise obligation to deliver the gatelines and its funding cannot be transferred. This option is therefore not viable.
4	Gatelines and access and station improvements	✓	✓	✓	✓	✓	✓	This provides the opportunity to deliver station and access improvements alongside the GWR funded gatelines providing early deliverables for the hub project and significant customer benefits. This is the preferred option.

3 Economic Case

3.1 Overview

This section identifies the key economic, environmental and social impacts of the proposed scheme and presents the overall value for money. This effectively shows the extent to which the scheme's benefits outweigh its costs, whether monetised or not. The economic, environmental, social, public accounts and distributional impacts of the scheme have all been appraised following the principles contained within the DfT's transport appraisal guidance (WebTAG), in a manner which is proportionate to the total scheme cost.

The scheme impacts are summarised in an Appraisal Summary Table (AST), providing a brief and consistent summary of expected qualitative, quantitative and monetised impacts.

This section contains the following elements:

- A description of how the scheme's value for money has been established and the options and scenarios that have been modelled;
- Details of the key assumptions that have been made, regarding the assumed delivery of other nearby schemes or developments;
- A Value for Money Statement, in line with the DfT's latest Value for Money Assessment guidance;
- Details of how different variables will affect the value for money assessment, including the findings of growth-related sensitivity tests;
- Commentary on the scheme's expected economic, environmental, social and public accounts impact;
- A completed Appraisal Summary Table.

An important aspect of the Economic Case is the Value for Money Statement. This is based on summing the monetised impacts to establish an initial BCR, which implies an initial value for money band (poor, low, medium, high, or very high). This band is then adjusted to account for impacts where qualitative or quantitative, but not monetised, information is available.

3.1.1 Options Appraised

The strategic case identified a preferred scheme which has the best fit to the objectives for the Phase 1 improvements and this been taken forward for appraisal. The other options set out earlier in the business case were not taken forward for appraisal as these do not meet the objectives of the project. A number of sensitivity scenarios have also been appraised and these are presented later in the economic case.

3.1.2 Approach to Appraisal

The scheme has been appraised using a standard rail industry approach to the application of WebTAG and PDFH guidance, to forecast demand and revenue impacts and value non-user benefits through the marginal external costs approach.

The following key principles apply in the appraisal:

- 60-year economic appraisal period, for consistency with other transport scheme assessments across the UK;
- Do Minimum forecast of underlying demand growth assumed to include the impact of electrification and Intercity Express Trains. Do Something forecast of additional impact of Phase 1 benefits.
- Demand, revenue and some costs are capped 20 years from the current year for consistency with other transport scheme assessments. Staff costs are excluded from this and continue to grow with earnings growth.
- Costs and benefitted associated with the gatelines are assumed to form part of the Do Minimum case and so are excluded from the incremental impacts of Phase 1.
- Base year for pricing in real terms of 2010 with prices calculated in nominal terms with RPI growth and converted to real terms using the GDP deflator.
- All costs and benefits presented in market prices, and where necessary converted from factor costs, as recommended by WebTAG.
- Discount rates of 3.5% for the first 30 years from the current year and 3% thereafter are assumed.

The outturn cost and the Present Value of Costs (PVC) for each option has been estimated using the following information:

- The tendered price for the gateline supply and installation;
- The GRIP4 level estimate for the gateline civils, booking hall and café works and knowledge of key risks for these; and
- Existing experience of lift installations (including the original NR ball park price for an additional lift at Chippenham) and minor access works with an appropriate level of optimism bias applied.

The PVC includes allowances for annual maintenance and capital renewal costs over the 60-year appraisal period, as well as Optimism Bias.

The scheme involves work entirely within the station boundary and the need for extensive environmental sub-impact assessments is therefore reduced. The main focus of scheme appraisal is on the economic benefits, particularly the revenue and decongestion impacts arising from additional rail demand. However, appraisal of specific social impacts are also important and a qualitative approach has been adopted.

The Modelling and Appraisal Report provides further detail in Appendix 4.

3.1.3 Appraisal Assumptions

The general approach to the appraisal is to develop a Do Minimum forecast of future year demand at Chippenham station with demand growth capped after twenty years. A Do Something appraisal of future year demand with the proposed scheme has been then developed and the scheme benefits estimated from the difference between the two in demand, revenue and car travel.

A full list of appraisal assumptions applied to this approach is set out in the Modelling and Appraisal Report in Appendix 4 but the following key assumptions apply:

- Underlying demand growth taken from the Western Route study, at 3.4% per annum to 2023 and 2.3% per annum thereafter, which is broadly in line with 38% growth in the ten years to 2015/16
- The impact of committed interventions, estimated from PDFH and MOIRA, is overlaid on top as a one off uplift for 2019. A 2.4% uplift for the new trains impact has been derived from PDFH and a 1.6% uplift for the timetable impact has been taken from a MOIRA run for the March 2019 timetable, giving a one off uplift of 4% for 2019.
- The impact of the proposed additional interventions (over and above the Do Minimum case) is estimated using a PDFH based approach and cautious assumptions on the relative impacts from the scheme with only a modest 2.64% overall uplift in demand estimated.
- Additional revenue is assumed to arise from new trips and reduction in ticketless travel. New trips are taken as only those switching from other modes, with the rest assumed as abstraction, and taken as a standard rate of 54%. The existing average yield is applied to standard fares growth assumptions.
- The change in highway kms is estimated using a standard diversion factor of 26% and an average travel distance of 63kms. For simplicity, all highway kms are assumed to be removed from the South West and South East, with those east of Swindon assumed to be South East and everything else assumed to be South West.

Three separate sensitivity tests have been undertaken:

- Lower underlying demand growth: A slowing of underlying rail demand across the UK over the last 18 months gives rise to the possibility that underlying demand growth may reduce going forward. Underlying demand and committed interventions has been reduced by 50% to appraise this possibility for the full 20 years of modelled growth.
- Higher population growth impact: Across the country population growth has driven faster rates of rail growth in the last ten years. To assess the impact of this on the value for money of the scheme an additional forecast of demand attributable to the remaining allocated growth 2016 – 2026 (estimated at 3,375 homes based on the Chippenham Site Allocations DPD) was applied giving an additional uplift of 0.8% per annum over these first ten years.
- Higher costs: Recent history on rail schemes has demonstrated a significant propensity for cost increases. To assess the impact of a significant cost increase on the value for money category, all costs including capital and operational have been increased by 50%.

3.2 Value for Money Statement

The Value for Money Statement summarises the impact of the transport intervention under consideration. It uses the HM Treasury Green Book method of cost-benefit analysis, by weighing the benefits against the costs to indicate whether the scheme offers 'value for money'. Qualitative, quantitative and monetised information can be used in preparing the statement. This section contains the Value for Money Statement in line with the DfT's Value for Money Assessment guidance.

The Value for Money Statement in this section should be read in conjunction with the Appraisal Summary Table (ASTs) in Appendix 1. The ASTs identify the full set of scheme impacts across the economic, environmental, social and public accounts impact categories.

3.2.1 Value for Money (VfM)

When determining the Benefit Cost Ratio (BCR) for a scheme, an 'Initial BCR' is calculated, which estimates the value of benefit generated for every £1 of public expenditure on a scheme. The Initial BCR, Net Present Value (NPV) for the scheme options are presented in Table 6. Two appraisals are presented showing a conventional appraisal, where revenue is counted as a benefit, and a WebTAG compliant DfT revenue transfer appraisal, where revenue is assumed to transfer to central government through franchise payments.

Table 6 Economic Assessment summary

Assessment Type	Conventional	DfT Revenue Transfer	Detail
Initial BCR	**4.11**	**Financially Positive**	Includes monetised benefits as shown in the DfT's Analysis of Monetised Costs and Benefits (AMCB) table: economic efficiency (journey time and operating cost savings); accident savings; and greenhouse gas emission reductions.
Present Value of Benefits (PVB)	£11.4 million	£2.1 million	2010 prices, discounted to 2010 in line with DfT guidance.
Present Value of Costs (PVC)	£2.8 million	-£6.5 million	2010 prices, discounted to 2010 in line with DfT guidance. Includes allowances for renewals over appraisal period.
Net Present Value (NPV)	£8.7 million	£8.7 million	The NPV indicates by how much the benefits of a scheme exceed the costs. This NPV is for the 'initial BCR'.
Adjusted BCR	4.11	Financially Positive	No additional monetised impacts
Qualitative Assessment	Moderate Beneficial	Moderate Beneficial	Slight adverse historic environment impact offset by moderate beneficial journey quality, severance and security impact
Key Risks / sensitivities	Risk budget applied to scheme costs: £0.19m *(real terms market prices)*	Risk budget applied to scheme costs: £0.29m *(real terms market prices)*	Key risks include NR approvals and listed building consent. Therefore a risk budget has been included in the estimates of 10% for Part A and 30% for Part B to account for delay or additional cost as a result. Appropriate Optimism Bias has also been applied in the

			economic appraisal with 18% for Part A and 50% for Part B due to the early stage of development.
VfM Category	Very High	Very High	Monetised assessments suggest that the VfM category should be Very High for the proposed scheme. Qualitative assessment outcomes are not significant enough to alter the category.

The following headline conclusions can be drawn from the initial economic appraisal results:

- The scheme represents **Very High Value for Money**, with a strong initial BCR supported by positive findings from the qualitative assessments.
- The application of DfT revenue transfer principles, which correctly reflect the accounting of revenue attributable to new schemes, demonstrates that the scheme is **financially positive**.
- The qualitative assessments demonstrate a **strong impact** on meeting the wider social and economic objectives of the scheme to **improve journey quality and reduce severance**.

3.2.2 VfM: Transport network user benefits

It is clear that the scheme will deliver moderate benefits for transport network users through a combination of the mode shift from private car to rail attracted by the station improvements and the beneficial impacts on the customer experience of rail users themselves. Key impacts include:

- **Moderate reduction in vehicle trips per annum** of up to 23,000 spread out throughout the M4 corridor but with the greatest density between Chippenham and Bath
- **Large reduction in car kms per annum** of up to 1.5 million, reflecting the high average trip length by rail, with the largest reduction off the M4 between Swindon and Reading
- **Moderate improvement in customer experience** for station users – assessed in the social impact section.

3.2.3 VfM: Environmental and social impact

The qualitative assessments did not change the Value for Money category as they are largely positive and the category cannot increase. However, they demonstrate the significant impact of the scheme in addressing the objectives of it and the wider Chippenham Station Hub project.

The scheme has very little environmental impact with only a **slight adverse rating for historical environment.** This can be mitigated through detailed design and further detail can be found in the Appraisal Summary Table.

In contract the scheme has significant social impacts with a **moderate beneficial impact on security, journey quality and severance** issues, across the railway and to/from the station. These are important impacts as they measure performance against key scheme objectives and

are also essential in preparing for the wider Chippenham Station Hub project. Further detail can be found in the Appraisal Summary Table.

3.2.4 VfM: Risks

A number of risks could potentially impact on the value for money category:

- Lower underlying demand resulting from slower overall rail growth due to macro-economic factors. This is a risk as, despite underlying growth rates being taken from the industry standard Western Route Study forecasts used as the basis for schemes across the country, rail industry growth has slowed over the last 18 months against predictions. It is therefore considered as a key sensitivity test.
- Higher costs resulting from underestimation of capital costs or an increase in the future costs of opex, maintenance or renewals due to macro-economic factors. Although a risk allowance of 10% and optimism bias has been applied to the cost estimates increases in scheme costs remain an important issue in the rail industry. It is therefore considered as a key sensitivity test.

3.2.5 VfM: Sensitivity

Although the central case represents Very High Value for Money it is necessary to consider potential uncertainties that could change the value for money classification. Two key uncertainties were identified as risks that could impact on the Value for Money category and three sensitivity scenarios have therefore been developed. Two of these relate to either higher or lower demand, defined earlier in the report, and the third relates to an increase in the cost base by 50%.

Table 7 sets out the results of this assessment. This shows that the value for money classification represented by the initial BCR could potentially reduce due to variation in the levels of underlying demand or a significant increase in the cost base. However, with strong qualitative impacts increasing the classification this would still be robust and the scheme value for money is therefore not considered particularly sensitive to these factors.

Table 7 Sensitivity scenarios summary

Sensitivity scenarios	Initial BCR
0. Central case scenario	4.11
1. Lower underlying demand growth – underlying rate reduced by 50%	3.29
2. Higher population growth impact – applied on top of underlying rate	4.36
3. Higher costs – 50% increase in capex and opex costs	2.66

3.3 Appraisal Summary Table

3.3.1 AST Introduction

The Appraisal Summary Tables sets out a full description of the impacts in each economic environmental and social category. The impacts are summarised below but the full table can be found in Appendix 1.

3.3.2 Economic Impacts

Business Users and Transport Providers

The scheme will have a large beneficial impact on business users and transport providers. For business users the impact primarily results from the decongestion effects of mode shift from car to rail. This is valued at £1.1m to business users, which is a moderate beneficial impact. More significantly the net revenue impact of incremental demand and reduction in ticketless travel is large, valued at around £9.3m. In the long run much of this will return to central government through franchise payments but to have the income is still a significant benefit to transport providers.

Business Users and Transport Providers impact – *Large Beneficial*

3.3.3 Environmental Impacts

Noise

The scheme does not include any key additional generators of noise in comparison to existing generators of noise such as train movements and traffic. The additional lift and small number of additional vehicle trips to the station will both have only an extremely modest impact. Each of these are insignificant compared to the existing situation and the overall impact is therefore considered to be negligible.

Noise impact – *Neutral*

Air Quality

The reduction in car km resulting from the mode shift from car to rail as a result of the scheme is expected to have a very slight impact. However, there is no Air Quality Management Area within Chippenham and the net impact of change in vehicle trips to the station set against the change in vehicle travel in the town is unlikely to have any impact on air quality either.

Air Quality impact – *Slight Beneficial*

Greenhouse Gases

The reduction in car km resulting from the mode shift from car to rail as a result of the scheme is expected to have a slight beneficial impact. Using the marginal external costs approach the benefit of these is estimated at around £5k per annum initially totalling around £221k over the appraisal period

Greenhouse Gases impact – *Slight Beneficial*

Landscape

The scheme will have a negligible impact on landscape in the surrounding area. There is no significant landscaping around the station to be impacted on with only a small number of trees on surrounding car parks, which are unaffected by the scheme. Despite the ground dropping towards the town centre the station is also largely screened by surrounding buildings with no visual impact from the works.

Landscape impact - *Neutral*

Townscape

The scheme sits within a conservation area. However, the historic station buildings are surrounded by large surface car parks and, particularly to the north, poor quality commercial buildings. The slight adverse impact of works to the historic station buildings is considered to be offset by a slight beneficial impact on the general appearance of buildings in the area, given the currently low quality buildings and surface car parks around the historic station itself. In addition, mitigations can be implemented through design to limit the impact on the historic buildings and must be to secure listed building consent.

Townscape impact - *Neutral*

Historic Environment

The scheme sits within a conservation area with a number of grade 2 listed buildings from the 17th to 19th century period, including a railway office reputedly built by IK Brunel. Other key listed buildings include a number of surrounding houses, a former weighbridge and the station buildings themselves, with the complex of non-listed canopies and steps and bridge spans. These can generally be grouped into listed station buildings (including the railway office and weighbridge) and listed surrounding buildings.

An adverse impact is therefore identified as a result due to the location of the scheme within a conservation area with a number of listed buildings. However, this is only slight as the impact is primarily on the setting, context and form of the station building itself, with little impact on other categories or other buildings.

Historic Environment impact – *Slight Adverse*

Biodiversity

The scheme will have a neutral impact on biodiversity on site or in the surrounding area. The physical works within the scheme take place fully within the built up environment of the station and will neither increase or remove vegetation or habitat.

Biodiversity impact – *Neutral*

Water environment

The scheme will have a neutral impact on the water environment on site or in the surrounding area. No additional surface or foul runoff or discharge will be produced and drainage arrangements will remain the same. The only slight impact will be from the collection of rainfall

on two additional roofs vice the hard surfacing below but this will neither change the volume or drainage system.

Water Environment impact – *Neutral*

A summary of these environmental impacts is presented in table 8.

Table 8 Summary of environmental impacts

Environmental	Impact	Assessment
Noise	Neutral	Negligible impact from either construction or operation of lift due to lack of residences in area
Air Quality	Slight Beneficial	Very slight beneficial impact from reduction in car travel but so small as to be almost negligible
Greenhouse Gases	Slight Beneficial	Slight beneficial impact from reduction in car travel with significant car kms reducing carbon
Landscape	Neutral	Negligible impact on landscape as vegetation and view of station are largely unaffected
Townscape	Neutral	Slight beneficial impact of generally good design compared to surrounding buildings offset by slight negative principle of works to conservation area
Historic Environment	Slight Adverse	Slight adverse impact of works to setting and form of historic station building
Biodiversity	Neutral	Negligible change in biodiversity with no vegetation or habitat removed or provided
Water Environment	Neutral	Negligible change in water environment with no significant drainage changes

3.3.4 Social Impacts

Commuting and Other Users

The scheme will have a significant impact on commuters and other users through the decongestion effects of mode shift from car to rail. Overall these impacts are estimated at £1.1m using the marginal external costs method. The scheme will also generate unquantified other benefits to station users through the journey quality impacts set out below.

Commuting and Other Users impact – *Moderate Beneficial*

Physical Activity

The scheme will have a neutral impact on physical activity as travel to the station will involve travel by a number of modes off setting each other.

Physical Activity impact – *Neutral*

Journey Quality

The scheme will lead to an improved customer experience for station users. Particular journey quality impacts arising have been identified in relation to positive impacts on the cleanliness,

facilities and environment categories through the provision of new booking hall and cafe facilities and better staff presence.

Journey Quality impact – *Moderate Beneficial*

Accidents

The reduction in car km resulting from the mode shift from car to rail as a result of the scheme is expected to have a slight beneficial impact Using the marginal external costs approach this has been valued at around £11k in real terms initially, totalling £580k over the appraisal period.

Accidents impact – *Slight Beneficial*

Security

A significant beneficial impact will arise from the better staff presence, restricted access to the station and general increase in the quality of station facilities. The impact is moderate as the number of pedestrian movements around the station is high, around 10,000 when allowing for additional movements around the station environs and across the railway, and the beneficial impact of staff presence is significant.

Security impact – *Moderate Beneficial*

Access to Services

The scheme will have a neutral impact on access to services with the beneficial impacts of the new lift addressed through severance impacts.

Access to Services impact – *Neutral*

Affordability

The scheme will have a neutral impact on personal affordability of travel with no impact on fares or cost of travel.

Affordability impact – *Neutral*

Severance

The scheme will have a beneficial impact arising from a significant improvement for mobility impaired users in accessibility across the railway, or into the station from the north. Alternative routes across the railway are limited (use of stairs or long slopes) and there is no step free access to the station from the north despite the presence of important services either side. Notably, Wiltshire College, the Olympiad Leisure Centre and Wiltshire Council offices to the south, and Hathaway retail park and employment opportunities to the north. Severance across the railway has thus been identified as an important issue within the Chippenham Masterplan and providing step free access across will be an important first step prior to providing additional routes across the railway.

Severance impact – *Moderate Beneficial*

Option values

The scheme will have a neutral impact on public transport options as the scheme will neither increase nor decrease these.

Option Values impact – *Neutral*

Distributional impacts

Distributional impact assessment is now a mandatory requirement of the appraisal process. Scheme promoters need to 'consider the variance of transport intervention impacts across different social groups'. Specifically, there are eight social and environmental indicators for which the distributional impact must be considered: commuting and other road user economic benefits; noise; air quality; accidents; severance; security; accessibility; and personal affordability.

Step 1 of the WebTAG distributional impact process (screening) has been completed and a completed distributional impact screening proforma is included in the Modelling and Appraisal Report. No significant distributional impacts are anticipated.

Table 9 Summary of social impacts

Social	Impact	Assessment
Commuting and Other Users	Moderate Beneficial	Moderate beneficial from the decongestion effect of reduction in car kms
Physical Activity	Neutral	Negligible change in physical activity identified
Journey Quality	Moderate Beneficial	Moderate impact from better cleanliness, facilities and environment through new booking hall, cafe facilities and additional staff presence
Accidents	Slight Beneficial	Slight beneficial from reduction of highway accidents to non-users due to reduction in car kms
Security	Moderate Beneficial	Moderate impact from better staff presence and general upgrade of facilities alongside the pre-planned restricted access and high footfall
Access to Services	Neutral	Negligible impact on access to services with impact of lift assessed within severance assessment
Affordability	Neutral	Negligible change in personal affordability identified
Severance	Moderate Beneficial	Moderate impact on mobility impaired users crossing the railway or accessing the station from the north
Option Values	Neutral	Negligible change in public transport options identified

3.3.5 Impacts to Public Accounts

Cost to Broad Transport Budget

The 'cost to broad transport budget' covers the scheme costs, including the full stream of maintenance and operating costs anticipated over the 60-year appraisal period, that will be borne by the public sector, whetherby local or central government. In this case this excludes operational and maintenance costs as these will be carried by the private sector. It is the same

as the Present Value of Costs (PVC), which includes Optimism Bias and is estimated in 2010 prices, also discounted to 2010 using the HM Treasury discount rates, in accordance with DfT guidance.

It should be noted that the PVC does not represent the actual investment cost and should therefore not be used in any request for funding. The PVC is for economic appraisal purposes only. Information on scheme costs is presented in the Financial Case (Section 4).

The PVC (2010 prices, discounted to 2010) using a conventional appraisal is estimated at 2.8 million. Applying the DfT guidance on revenue transfer this changes to £-6.5 million denoting a significant negative cost (or net gain) to the broad transport budget.

Indirect tax revenues

An additional cost to the government and ultimately wider society can result from a reduction in indirect tax revenues, primarily from reduced fuel purchase. The mode shift from car to rail will lead to a reduction in car kms and consequently fuel use. A moderate loss of indirect tax revenues over the full appraisal period is expected.

Indirect tax revenue impact: £0.76 million reduction

3.4 Summary of Economic Case

The Economic Case has been prepared in a manner which is considered to be proportionate to the scheme investment cost, using PDFH and DfT guidance to estimate the monetised benefits.

The economic benefits of the Phase 1 station improvements outweigh its costs and any negative impacts. The scheme has an **Initial BCR of 4.11**, and an **NPV of £8.7 million**. The scheme offers **Very High Value for Money**. The scheme is also **Financially Positive** when appropriate revenue transfer to central government is taken into account.

Furthermore, the scheme presents no worse than Slight Adverse environmental impacts, for which mitigation is possible, and offers Moderate Beneficial social impacts with regard to journey quality, severance and security. The scheme also strong delivers against key objectives including reduced severance and improved accessibility from the north side of the railway.

Sensitivity tests undertaken as part of the Economic Case demonstrate that:

- Scheme economic performance is reduced under a scenario in which underlying demand growth is reduced or scheme costs increased, although the BCR remains strong; and
- The BCR for the scheme is improved when population growth is assumed on top of underlying demand growth.

4 Financial Case

4.1 Overview

This section presents evidence of the scheme's affordability both now (for the implementation / construction phase) and in terms of ongoing revenue liabilities (whole life costs). It also includes information on the estimated scheme outturn cost. The scheme implementation costs presented in this section (rather than those in the Economic Case) should be used for any reporting on scheme costs.

4.2 Scheme Costs

4.2.1 Implementation Cost summary

Scheme costs for both Part A and B of Phase 1 have been estimated in 2016/17 prices and outturn prices. For Part A these are estimated from GRIP 4 design drawings and for Part B these are estimated from benchmarked costs from similar schemes elsewhere. A summary of the costs is shown in table 10.

Table 10 Cost estimate summary

Cost Category	Cost (£m)	
	Part A	Part B
Preparatory (including detailed design and survey work)	0.187	0.072
Preliminaries (including site setup, temporary works, overheads & profit)	0.203	0.124
Main Construction (including utility diversions)	0.568	0.620
Equipment Installation (including gatelines, CCTV and TVMs)	0.646	-
Site Supervision	0.101	0.053
Risk Budget (contingency)	0.171	0.261
Total – Base year prices	1.876	1.130
Inflation	0.047	0.065
Total – Outturn prices	1.922	1.196

Preparatory costs include:

- GRIP 1-5 design and QS
- Surveys and site investigation
- Procurement of gateline supplier
- Consents and approval costs
- Lease negotiations

- Legal fees
- Project management costs
- BAPA costs

The construction (including preliminaries) and equipment installation costs are summarised in Appendix 8, covering the following:

- Station interface management, site mobilisation and dismantling (preliminaries);
- Site clearance and building strip out;
- Foundations, drainage and surfacing works;
- Historic building renovation, fit out and furnishing works;
- New structures and structural modifications;
- Telecomms and electrical works;
- Gateline, helppoint and ancillaries supply, installation and configuration;
- TVM, CCTV, and signage install;
- Cycle parking, cycle hire and bus stop improvements; and
- Industry Risk Fund and NR Fund contributions.

An allowance has been made to cover site supervision costs both to GWR and NR (through the BAPA), in order that the requirements of the Construction Design and Management (CDM) Regulations, the GWR Safety Management System and NR Asset Protection can be fulfilled.

Risk

The purpose of the risk budget is to cover any increased costs that may result from the full set of identified scheme risks, whether direct cost increases or indirectly as a result of scheme delays. A Risk Register is provided in Appendix 7, with specific risks identified. Further information on the key risks and how these risks will be managed throughout scheme development and implementation is provided in the Management Case (Section 6).

Optimism Bias

Optimism Bias adjustments are designed to deal with the 'systematic tendency of project appraisers to be overly optimistic' with regard to a project's 'costs, benefits and duration'. To reflect the current status of scheme designs and costs, an Optimism Bias uplift of 18% has been applied to scheme costs for Part A and 50% for Part B as part of the Economic Case, therefore ensuring that the economic appraisal is robust.

Optimism Bias adjustments are not intended for use in estimating actual scheme outturn costs for funding requests and are therefore not included in the costs presented in Table 10.

4.2.2 Implementation Spend Profile

The expenditure profile has been estimated from the programme in Appendix 6. In general terms the majority of spend on Part A will take place in 2017/18 with a small element of the Part B spend also. Delivery Part B works will use the remaining funding in 2018/19.

Table 11 Expenditure spend profile summary

Estimated Outturn Spend (£m)	2016/17	2017/18				2018/19				Cost Total
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Preparatory	0.063	0.067	0.061	0.013	0.017	0.024	0.021			0.259
Construction (including prelims)			0.209	0.449	0.154		0.131	0.318	0.318	1.515
Equipment Install				0.331	0.331					0.646
Site Supervision			0.012	0.046	0.046		0.018	0.019	0.019	0.155
Risk Budget				0.087	0.087			0.138	0.138	0.431
Total by Quarter	0.063	0.067	0.281	0.927	0.635	0.024	0.170	0.475	0.475	
Total by Year	0.063				1.910				1.145	
Grand Total									3.118	

4.2.3 Whole Life Costs

An estimate of whole life costs including operations, maintenance and renewals has been included within the economic case. Primarily this consists of the maintenance costs of the new equipment and the renewal of this equipment. It is assumed that these would fall for renewal on an approximate 15 year cycle. The operational and maintenance costs for all of this equipment would fall to the Station Facility Operator funded by the incremental revenue from the scheme. Renewal of the equipment would be undertaken by a combination of NR and successor franchises as appropriate with budgets provided as appropriate at the time of future franchise awards.

4.3 Funding Assumptions

4.3.1 Local Growth Fund

A provisional allocation of £2m towards the Phase 1 scheme, of the full £16m Chippenham Station Hub provisional allocation, was approved by SW LEP Board on 25 January subject to approval of an Outline Business Case. This funding is currently assumed to fall across 2017/18 and 2018/19.

4.3.2 Great Western Railway

GWR has committed £1.1m towards the scheme as part of its franchise commitment to install gatelines. This funding is specifically to complete the installation of the gatelines in the project and enabling works. Capital expenditure authority (GWR and First Group) has been secured to allow it to be spent. The funding has been provisionally allocated by year below.

Table 12 Funding profile summary

Estimated Spend (£m)	2016/17	2017/18				2018/19				Cost Total
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Local Growth Fund					0.81	0.19	0.2	0.4	0.4	2
Great Western Railway	0.06	0.04	0.25	0.75						1.07
Total by Quarter	0.06	0.04	0.25	0.75	0.81	0.19	0.2	0.4	0.4	
Total by Year	0.06				1.85				1.19	
Grand Total									3.1	

4.4 Accounting Implications: Cash flow statement

The scheme is expected to have the following implications on public accounts:

- Devolved funding (Local Growth Fund) is requested to fund £2 million (65%) of the scheme implementation costs, with £0.81 million (40%) requested for the 2017/18 financial year and £1.19 million (60%) for the 2018/19 financial year;
- A private sector contribution of £1.1m is available from GWR;
- Expenditure during the 2016/17 and 2017/18 financial years, totalling £1.97 million, will be funded initially by GWR with £0.81m being reclaimed from Local Growth Fund during 2017/18;
- Operations and maintenance costs will be funded by GWR and successor franchises; and
- Capital renewal costs will be funded by the rail industry through NR regulated settlements and successor franchises with expenditure on renewal works of key equipment taking place approximately every 15 years.

5 Commercial Case

5.1 Overview

This section sets out the approach proposed to procure the design and construction of both parts of the scheme. As a transport provider GWR operates to strict procurement guidelines. All procurement (consultants & contractors) must be in accordance with GWR Procedure SMS-1350-00 – *Procurement and Supplier Management Procedure* – ensuring that procurement is legal, accountable and auditable.

Suppliers must be registered with GWR as an approved supplier through GWR's supplier assurance system and in accordance with GWR's Supplier Code of Conduct requiring them to deliver services:

- Ethically & in accordance with GWR's guidelines for Environmental & Social Responsibility
- In accordance with GWR & First Group's Sustainable Procurement Strategy
- To manage and minimise commercial/reputational risk; and
- To obtain best value for money.

Due to the differing timescales of Part A and B, with Part A able to be delivered as part of the committed GWR gateline project, a separate procurement strategy is required for each. The required outputs and options are set out below along with an outline of the proposed approach.

5.2 Required Outputs

The outputs required throughout the project from consultants and contractors are consistent with any design and construction activity on railway property but not on the line itself. As such the designer must follow the GRIP process and deliver submission and approvals of NR's standard Form 1/2/3. They must also deliver consents and subsequent employers representative role as appropriate. The contract must also follow the GRIP process and submit method statements and work package plans for approval as appropriate. They must also adhere to the GWR safety management system and produce the project safety file. A full list of outputs for each role to be procured is set out in table 13.

Table 13 Procurement key outputs

Key Outputs		
Part A		
Designer	• GRIP3 Option Selection • GRIP4 Developed Design • GRIP5 Detailed Design • Form 1 approval • Form 2 approval • Form 3 approval	• Landlord consent • Listed building consent • Diversity Impact Assessment • Surveys and Searches • Employers representative • CDM-C

Principle contractor	• Construction drawings • Work package plans • Method statements • Appropriate insurances	• Construction complete • Safety file • Snagging and defects rectification • As built drawings issued
Gateline supplier	• Supply of automatic ticket gates with barcode, ITSO & cEMV readers • Supply of video help points for remote operation of gatelines • Installation of automatic ticket gates (inc barcode, ITSO & cEMV readers) and video help points	• Configuration and enablement of automatic ticket gates (inc barcode, ITSO & cEMV readers) and video help points • Maintenance of automatic ticket gates (inc barcode, ITSO & cEMV readers) and video help points
Part B		
Designer	• GRIP3 Option Selection • GRIP4 Developed Design • GRIP5 Detailed Design • Form 1 approval • Form 2 approval • Form 3 approval	• Landlord consent • Listed building consent • Diversity Impact Assessment • Surveys and Searches • Employers representative • CDM-C
Principle contractor	• Construction drawings • Work package plans • Method statements • Appropriate insurances	• Construction complete • Safety file • Snagging and defects rectification • As built drawings issued

5.3 Procurement Option Assessment

This section sets out the different procurement strategy options considered by the project and the rationale for the preferred strategy. Due to the differing timescales of Part A and B, with Part A able to be delivered as part of the committed GWR gateline project, a separate procurement strategy is required for each. The available options are set out in table 14.

At this stage the preferred approach for Part A is option 1 and procurement has already begun proceeding on that basis. For Part B option 2 is currently the most likely but option 3 maybe preferred if discussions with NR demonstrate particular efficiencies through this approach.

Table 14 Procurement option assessment

Procurement Strategy Options	Pros	Cons
Part A		
1. Separate procurement of designer, principle contractor and gateline supplier. Designer to be appointed from FG framework. Principle contractor to be appointed through competitive tender. Gateline supplier competitively tendered as part of wider gateline supplier procurement (PREFERRED)	• Established route • Simplifies GWR gateline supplier relationship • Procurement already in progress	• Interfaces between different suppliers must be managed
2. Single procurement of principle contractor through competitive tender to complete construction and gateline supply, sub-contracting as appropriate. Designer to be appointed from FG framework.	• Streamline procurement • Coordination of site activity	• Inefficient gateline supplier approach with separate maintenance arrangement • Change of approach mid-process
Part B		

1. Single procurement of principle contractor through competitive tender to complete design and construction of forecourt and lift works, sub-contracting as appropriate.	• Streamline procurement • Innovation through design	• Uncertain scope likely to import cost
2. Separate procurement of designer and principle contractor. Designer of both forecourt and lift to be appointed through FG framework. Procurement of principle contractor through competitive tender to complete construction of forecourt and lift works, sub-contracting as appropriate.	• Established route • Procure on fixed design and scope reducing cost risk	• Different skill sets for the lift or forecourt works maybe missed
3. Separate procurement of forecourt and lift works. Procurement of principle contractor through competitive tender to complete design and construction of forecourt works. Lift design and construction to be contracted through NR.	• Streamline procurement of forecourt • Opportunity to leverage NR experience from original scheme	• NR affordability • Uncertain scope likely to import cost to forecourt • Coordination of site activity
4. Separate procurement of forecourt and lift works. Design of forecourt works to be appointed through FG framework. Procurement of principle contractor through competitive tender to complete construction of forecourt works. Lift design and construction to be contracted through NR.	• Established route • Procure on fixed design and scope reducing cost risk • Opportunity to leverage NR experience from original scheme	• NR affordability • Coordination of site activity

5.4 Preferred Procurement Approach

Due to the differing timescales of Part A and B, with Part A able to be delivered as part of the committed GWR gateline project, a separate procurement strategy is required for each. The overall procurement structure of the project is summarised in figure 8. The overall project flows from left to right through the diagram.

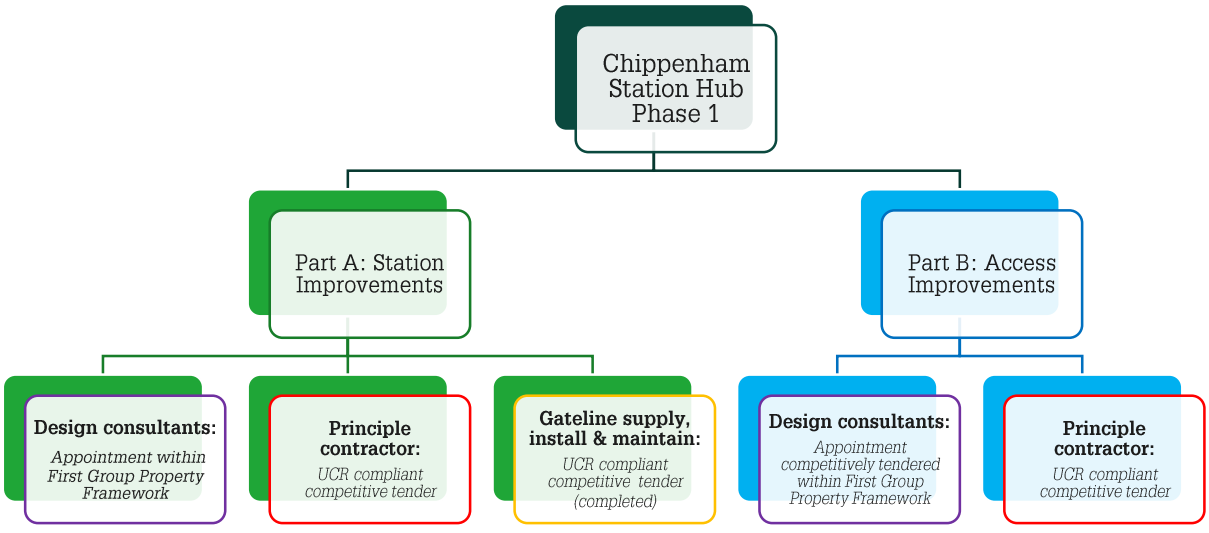


Figure 8 Procurement structure

As set out in the previous section there are a number of differing options for each part but the preferred route follows a conventional approach with separate procurement exercises for design and construction. For Part A this follows on from existing progress on procurement with design already proceeding using AHR and a gateline supplier, Cubic, already selected as part of a wider gateline supplier procurement exercise. For Part B a similar approach is likely.

The procurement of the principle contractor in each case will follow GWR procurement policy with GWR's Procurement Department oversees supplier selection following GWR's Procurement Process SMS1350 -12. This in summary requires:

- The supplier to be from the Achilles RISQS system and for GWR to:
  - Prepare criteria for supplier assessment and contract award
  - Agree tender list(s) from appropriate RISQS categories
  - Agree evaluation criteria for award
  - Prepare requirements and ITT submission documentation
  - Arrange Tender Evaluation Panel (TEP) & carry out tender evaluations (for both quality and cost)
  - TEP to make recommendation(s) for Contract Award in accordance with GWR Governance procedure
  - Once approval is received to let and formalise the Contract before site commencement.
- Construction Contracts will be let under the JCT suite of contracts with First Group/GWR amendments
- The Contract for the supply and installation of the automatic passenger gating system will be let to GWR/First Group's specialist term contractor - Cubic Transportation Systems Ltd who have been selected in competition.

5.5 Contract Type

The construction works will be procured as stated above (preferred procurement approach) and the contract will be let on the basis of the JCT Intermediate Building Contract (IC) with GWR amendments.

The Contract for the supply and installation of the automatic passenger gating system will be let to GWR/First Group's specialist term contractor - Cubic Transportation Systems Ltd who have been selected in competition and the contract will be entered into on the basis of pre-agreed standard terms and conditions.

5.6 Risk Management and Transfer Arrangements

The contract will be let on a traditional basis using the JCT Intermediate Building Contract which is prescriptive in managing liability and risk. Tenderers will be required to provide a lump sum firm price based on a detailed multi-disciplinary design with prescriptive

specifications and schedules of work to accurately define the required scope and quality. Contract Administration will be carried out as part of the Consultants appointment.

- A Project risk register will be maintained by the Project Manager throughout where risks will be regularly updated and formally reviewed on a monthly basis.
- Section 6 of the JCT Intermediate Building Contract defines Management of Injury, Damage & Insurance; the following clauses will apply with GWR standard amendments:

  Clause 6.1- Liability of Contractor – personal injury or death

  Clause 6.2 – Liability of Contractor – Injury or damage to property

  Clause 6.3 – Injury or damage to property – as amended with new clause 6.3A1

  Clause 6.4 – Insurance against Personal injury and property damage, contractors liability and insurance

  Clause 6.5 – Contractors Insurance – Employers Liability

  Clause 6.6 – Excepted Risks.
- Additional Clauses 6.16.1 - 6.16.2.6 – Contractors Liability cap will apply, using standard liability caps for Public Liability, Professional Indemnity (where relevant) and Contractors All Risk Insurance.

5.7 Proposed Procurement Approach: Summary

The procurement of phase 1 will be split for Part A and B. For Part A design is already well advanced and a separate principle contractor and gateline supplier will be appointed (the latter already appointed). For Part B a designer will be appointed from the First Group property framework consultants and a single principle contractor appointed for construction. This may not may not include the lift which could be contracted through NR, through an Implementation Agreement, as a more efficient approach.

6 Management Case

6.1 Overview

This section sets out how the scheme will be delivered. It demonstrates that timescales and phasing are realistic, that an appropriate governance structure is in place to oversee delivery, that risks have been identified and suitable risk management processes developed, and that there are robust plans for communications and stakeholder management.

The Management Case also ensures that the benefits set out in the Economic Case are realised and it includes measures to assess and evaluate this.

This section contains the following elements:

- Programme and project dependencies;
- Governance, organisational structure and proposed roles;
- A project plan for scheme development and implementation;
- Information on proposed communication and stakeholder management;
- Risk identification and a risk management strategy, setting out how the risks have been identified, their likely impact, appropriate mitigation, and how the risks will be managed; and
- A Benefits Realisation, Monitoring and Evaluation Plan, which sets out the approach to ensuring that the stated benefits (in the Economic Case) are delivered. It also sets out the methods to be used in monitoring progress against the scheme objectives and indicators of success (as reported in the Strategic Case).

6.2 Overall assessment of scheme deliverability

Subject to funding approvals, the Chippenham Station Hub Phase 1 could be delivered within an 18 month period from OBC approval. The timescales for each delivery stage are set out in the Scheme Implementation Programme below. The first stage of Phase 1 can be delivered in 6 months. This includes the completion of Part A and design on Part B. Completion of Part B itself will take longer with completion expected to take a further 12 months.

The design process, works procurement and implementation will follow the Guide to Railway Investment Projects (GRIP) process, stages 1 (output definition) through to stage 8 (project close out) also following GWR's go/no go stage gate review procedure as follows:

Stage gate A – Sponsor Approval

Stage gate B – Approval to Appoint Consultants (GRIP 1-3)

Stage gate C – Handover to Property Projects Manager

Stage gate D – Approval to Appoint Consultants (GRIP 4-8)

Stage gate E – Design Approval/Proceed to Tender

Stage gate F – Approval to Appoint Contractors

Stage gate G – Construction Phase

Stage gate H – Verification of Business Case & Final Close out

This is an established project being used by GWR to deliver around £65m of station improvements at present. The project is a conventional station improvement with no major external risks. The section below sets out GWR has extension experience of delivering this kind of project and so given the project characteristics and GWR competence it is considered to be highly deliverable.

6.3 Evidence of similar schemes

GWR has extensive experience of delivering projects on its stations across the network. It is able to leverage experience of First Group as well as its in house property project team. Projects delivered in the past include:

- Installation of gateline, ticket vending machines and retail equipment
- Refurbishment of station buildings including booking halls, waiting rooms and retail units
- Construction of car parks on brownfield and greenfield sites
- Construction of multi-storey car parking
- Forecourt and interchange improvements

GWR is currently delivering a large portfolio of station projects worth around £65m across its network. A summary of recent projects is shown in table 15.

Table 15 GWR evidence of similar schemes

Project	Description	Works Date	Role	Value	Project delivered successfully
Trowbridge Station Refurbishment	New waiting shelters, ticket vending machines and cycle parking shelters. Improvements to pedestrian access. Extension to cycle parking, Resurfacing, new lighting and improved layout in the car parks. Demolition of old taxi office to create additional car parking spaces. CCTV. Electric car charging point	Mar – Sep 2015	Delivered jointly by GWR, Wiltshire Council, Network Rail and the TransWilts Community Rail Partnership	c£0.9m	Yes
Melksham station refurbishment	New ticket vending machine, CCTV and cycle parking shelter.	Apr – Sep 2014	Delivered jointly by GWR, Wiltshire Council and the TransWilts Community Rail Partnership	c£0.2m	Yes

Swindon	New waiting room in vacant buildings. Refurbished toilets and renovation of deteriorating buildings.	Aug 2016 – May 2017	Delivered by GWR using NSIP	c£0.7m	Yes
Taunton retail unit	New retail unit (subsequently occupied by cafe) in historic listed building. Renovation of building and modernisation of facilities to meet modern regulations. Restoration of historic features.	May – Nov 2015	Delivered by GWR using NSIP and Railway Heritage Trust Funding	c£0.3m	Yes
Paddington Ticket Office	New ticket office in historic grade 1 listed building (part of Brunel's 1849 building) adjacent to Crossrail major construction works. New ticket office includes major internal works to provide new access to Crossrail station, new ticket windows, ticket machines, CCTV, customer information and significant restoration of historic fabric of building.	Oct 2015 – June 2016	Delivered by GWR	c£2.5m	Yes
Taunton Gatelines	Installation of ticket gatelines in the station for the first time. Included two sets of new gatelines, one in the booking hall and the other in platform with remote operation and ticket vending machine. New shelter for bus interchange at the same time.	2012	Delivered by GWR	£0.5m	Yes
Exeter Central Upgrade	New booking hall in place of vacant retail units (returning booking hall to original location in historic building), restoration of historic fabric of building, new ticket windows, ticket vending machines, CCTV and customer information systems. Cosmetic refurbishment of existing canopy. Separate but related projects delivered at the station in a coordinated fashion included: forecourt pedestrianisation and public realm scheme (Devon CC delivered), Access for All lifts (NR delivered) and installation of ticket gatelines (GWR delivered).	2012	Booking hall: Delivered by GWR Forecourt: Delivered by Devon CC Gatelines: Delivered by GWR	£0.7m £0.6m £0.7m	Yes
Tiverton Parkway	New 185 space car park and footpath to station. Delivered on site of temporary coach park also installed by GWR during Dawlish sea wall emergency. Project completed on greenfield site with complex planning (previous use implemented without planning due to emergency circumstances), land assembly	2016	Delivered by GWR	£0.8m	Yes

	(multiple land owners) and legal requirements (DfT sign offs as franchising authority).				
Keynsham Ramp	New access ramp to the platform from overbridge height. Works included complex piling and construction within a railway cutting above a 100mph main line.	2014	Delivered by GWR	£0.8m	Yes
Kemble Car Park	New 333 space car park and footpath to station. New highway access road and realignment to existing road. Project completed on greenfield site with complex planning (roman archaeology), land assembly (multiple land owners) and legal requirements (DfT sign offs as franchising authority).	Jan – June 2017	Delivered by GWR	£1.4m	Yes

6.4 Programme and project dependencies

Chippenham Station Hub Phase 1 proposal closely aligns with the objectives for the wider and subsequent phases of the Chippenham Station Hub scheme. The successful completion of Phase 1 will support the delivery of the wider scheme by effectively preparing station facilities to accommodate the forecasted increase in usage. However, the Phase 1 scheme is not dependent on progress with the overall Station Hub scheme.

Other existing rail industry projects at the station provide further interfaces which are being managed through a short term Coordination Group. A particular issue that is being managed is the temporary closure of the historic station footbridge while it is raised, which will restrict when the additional north side gateline can be installed. This element of the project is therefore dependent on the completion of the NR bridge raising. Notable interfacing projects include:

- Raising of the historic station footbridge for electrification (NR)
- Platform extensions for Intercity Express Trains (NR)
- Electrification works to install the OLE system, including structures and catenary (NR)
- Renewal of ticket vending machines (GWR)

Within the project a number of key dependencies also apply:

- Listed building consent (submission imminent)
- LEP business case approvals (OBC submitted)
- LEP funding agreement (critical path)
- Station change (ongoing)
- NR design approvals (ongoing)
- GWR expenditure authority (complete)

The completion of each of these is essential to allow contract award for Part A, albeit GWR is proceeding at risk on the Business Case and funding agreement due to the need to complete the gateline installation by December 2017. For Part B none of these items are on the critical path and it would be preferable to considered a staged approach to the completion of the full business case and funding agreements to allow Part A to proceed in advance of Part B.

6.5 Project governance and reporting

The Swindon and Wiltshire Local Enterprise Partnership has established a robust system of governance for overseeing the Growth Deal programme which utilises the resources of each of the two Local Authorities within the local geography. This collective programme management forms the Swindon and Wiltshire Local Enterprise Partnership Delivery and Performance Team which oversees and records the delivery, monitoring and reporting of Swindon and Wiltshire Local Enterprise Partnership Growth Deal programme projects. This system is illustrated in the figure below.

The Delivery and Performance Team will ensure that an efficient process of project management is implemented within all Growth Deal project deliveries and monitoring and reporting continues through to benefits realisation once the project delivery has completed.

The Delivery and Performance Team forms the link between lead project delivery partners and the Swindon and Wiltshire Local Enterprise Partnership governance process.

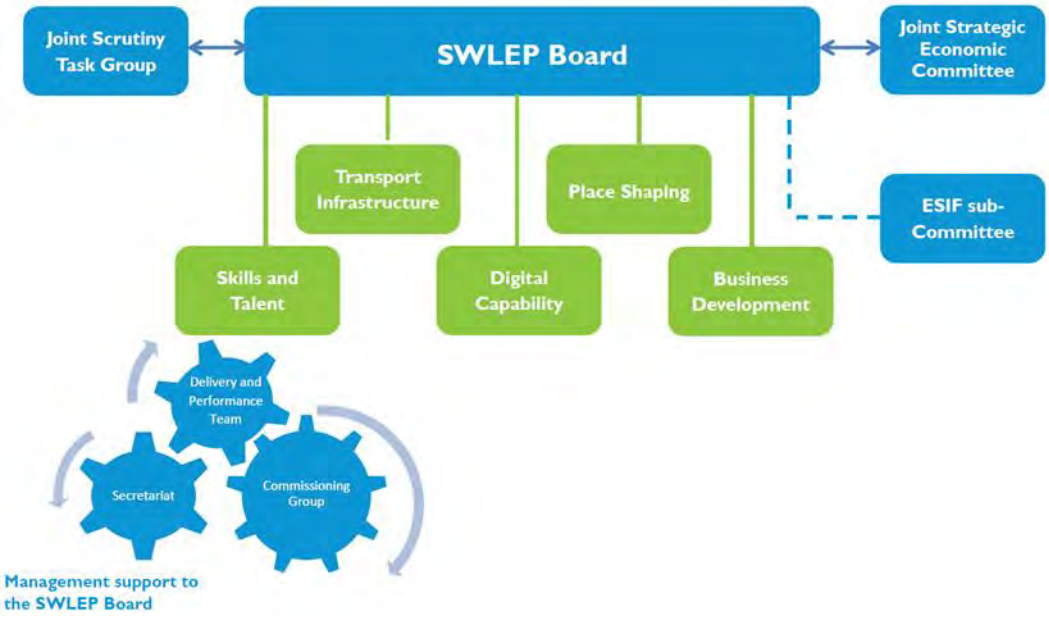


Figure 9 SW LEP Governance Structure

The lead project delivery partner for the wider Chippenham Station Hub project is Wiltshire Council and, as the Phase 1 project remains part of the wider scheme, reporting to the Delivery and Performance Team will continue to be managed by the Wiltshire Council Economic

Development team with GWR supporting as required. The wider Station Hub scheme is a DfT retained scheme and Wiltshire Council will also continue to manage the relationship with DfT on this, albeit Phase 1 is excluded from the retained scheme status.

To support communication and coordination between the partners, Wiltshire Council has convened a Chippenham Station Hub Steering Group, to coordinate activity across the projects and surrounding masterplan led redevelopments. The Steering Group consists of Wiltshire Council, GWR, NR, Chippenham Vision and other stakeholders as appropriate. GWR will report to the Steering Group on progress with Phase 1 and work collaboratively with the other partners on the joint management of programme and risk across the different phases.

Within GWR the project will follow an extensive governance process GWR has implemented for its capital programme. Either the Commercial Development Director or Finance Director will act as Executive Sponsor for the scheme with a Property Project Manager appointed to deliver the scheme. The roles and responsibility are set out in table 16.

Project reporting will be on a periodic (4 wkly) basis to the GWR Stations and Car Parks Steering Group. This is the Level 2 Executive governance meeting providing scrutiny and assurance on the full stations property portfolio worth around £65m, and is co-chaired by the GWR Commercial Development and Finance Directors. Reporting takes the format of a standard scorecard reporting on progress, programme, risks and costs. This steering group reports in turn for escalation purposes to the GWR Transformation Board which is the Level 1 Executive Board for the entire GWR transformation programme encompassing new trains, depots and stations.

Table 16 Project roles and responsibilities

Roles and Responsibilities		
Executive Sponsor (SRO) Development Delivery	 Matthew Golton Ben Caswell	Accountable for development and delivery in a safe manner and delivering the committed outputs.
Regional Development Manager	Matthew Barnes	Responsible for managing initial development of the project. Acts as internal client establishing the scope and business case and commissioning property team.
Property Project Manager	Tony Cole / Adrian Gilby	Responsible for delivery of the project. Appointing consultants to undertake design and managing the procurement of contractors to build the design. Also responsible for compliance with CDM regs and GWR Safety Management System.

6.6 Scheme implementation programme

An outline implementation programme is set out in Appendix 6. The key milestones from this are set out in table 17 below.

Table 17 Summary of scheme implementation programme

Milestones	Estimated Date
Outline Business Case published on SWLEP Website	21 June 2017
Outline Business Case considered by SWLEP Commissioning Group	7 July 2017
Outline Business Case considered by SWLEP Board	19 July 2017
Part A Listed Building Consent	Sept 2017
Part A Delivery contractor appointed	Sept 2017
Part A construction commences	Sep 2017
Part A construction complete	Jan 2018
Part B Listed Building Consent	Aug 2018
Part B construction commences	Aut 2018
Part B construction complete	Ear 2019

6.7 Assurance and approvals plan

The design process, works procurement and implementation will follow the Guide to Railway Investment Projects (GRIP) process, stages 1 (output definition) through to stage 8 (project close out) also following GWR's go/no go stage gate review procedure as follows:

Stage gate A – Sponsor Approval

Stage gate B - Approval to Appoint Consultants (GRIP 1-3)

Stage gate C - Handover to Property Projects Manager

Stage gate D - Approval to Appoint Consultants (GRIP 4-8)

Stage gate E – Design Approval/Proceed to Tender

Stage gate F – Approval to Appoint Contractors

Stage gate G – Construction Phase

Stage gate H – Verification of Business Case & Final Close out

These aligned processes provide extensive assurance to the delivery of railway projects. In particular, the application of stage gates ensures that no project can proceed until all approvals are in place including sign offs from the asset managers ultimately responsible for taking on the asset. An integrated Asset Management process is also adhered to assure the status of current assets and manage the handback and taking into use of new assets in a way which is safe and acceptable.

Over above these processes a detailed range of other approvals and consents are required and these are set out in table 18 below. These are typical of any project of this scope and the standard approach is set out.

Table 18 Summary of consents and approvals

Consents and Approvals	Approach	Status
Phase 1 overall		
Outline Business Case	Submitted for approval on 19 July	In progress
Full Business Case	To be submitted	Open
Part A		
Form 1/2/3	NR engaged through GRIP 1-8 BAPA	Complete
Construction approvals	GWR/NR approval of contractor method statements and work package plans	Open
Safety approvals	GWR safety management system	In progress
Listed building consent	GWR submission to Wiltshire council	In progress
Landlords consent	GWR submit at GRIP 4	In progress
Station change	GWR submit at GRIP 4	In progress
FG capital expenditure authority	GWR internal submission	Complete
Funding agreement board approval	GWR internal board paper	Open
Part B		
Form 1/2/3	NR to be engaged as appropriate	Open
Construction approvals	GWR/NR approval of contractor method statements and work package plans	Open
Safety approvals	GWR safety management system	Open
Listed building consent	GWR submission to Wiltshire council	Open
Landlords consent	GWR submit at GRIP 4	Open
Station change	GWR submit at GRIP 4	Open
FG capital expenditure authority	GWR internal submission	Open
Funding agreement board approval	GWR internal board paper	Open

6.8 Communications and stakeholder management

A Communications Plan has been prepared to enable Great Western Railway and Wiltshire Council to:

- Inform the public and key stakeholders of scheme progress
- Communicate expected scheme benefits
- Manage stakeholder expectations

The Communications Plan has been informed by similar project completed by Great Western Railway (see evidence of similar schemes).

6.9 Risk Management Strategy

As lead delivery partner, Great Western Railway will be responsible for the identification, management and mitigation of all risks associated with the project.

As part of this outline business case an initial risk register has been identified. The initial risk register can be found in Appendix 7.

6.10 Benefits Realisation Plan

Great Western Railway as lead delivery partner for the Chippenham Station Hub Phase 1 scheme will be responsible for recording the benefits of the project with support from Wiltshire Council. Indicative outcomes (see Strategic Case) have been developed as part of this business case. Additional benefits will be identified and planned as the project develops.

6.11 Monitoring and Evaluation

The SWLEP has developed a process of project monitoring, and evaluation utilising best practice and PRINCE 2 methodology. Great Western Railway will be required to report on progress and outputs to the SWLEP via Wiltshire Council.

6.12 Change Management

Great Western Railway will be responsible for the monitoring and reporting of changes to project scope, scale and cost. This will be recorded in a Change Control Notification. The SWLEP Delivery and Performance Team have developed a process of change management based on best practice methodology and PRINCE2 project management processes.

A series of risk based project tolerances will be agreed between the project management team and the SWLEP. Any breach of these tolerances will require an action from the lead delivery partner to report the nature of project change, impacts of the change on the delivery of the project and suggested actions to manage the change to the Swindon and Wiltshire Local Enterprise Partnership Commissioning Group for review.

6.13 Project Management Summary

The project is considered to be highly deliverable. It is consistent with other similar station projects delivered throughout the UK.

GWR has extensive experience of these, including station and access improvements in historic buildings, and is currently engaged in a programme of delivery worth around £65m. Most recently with improvements completed at Swindon and Kemble.

The scheme can be delivered in 18 months of approval of the Outline Business Case. Part A, through delivery alongside the gatelines, can be delivered in 2017/18.

Extensive and transparent governance arrangements are available through both SW LEP and GWR. Through effective reporting and change control, these will support the strong programme and risk management within the project.

The rail industry also has extensive assurance and approvals processes in place to ensure the project is delivered in a compliant and safe way and these will be adhered to.

GWR and Wiltshire Council together will implement an effective stakeholder management and communications plan as part of the wider Chippenham Station Hub scheme and will ensure the scheme realises its reported benefits through effective monitoring.

Appraisal Summary Table

Date produced:	23-Jun-17

Contact:	
Name	Matthew Barnes
Organisation	Great Western Railway
Role	Promoter/Official

Name of scheme:	**Chippenham Station Hub Phase 1**
Description of scheme:	Part A: Gatelines to all station entrances; new booking hall with a new entrance onto the frontage and significantly improved customer experience within the hall; and improved retail unit providing a high quality space for the existing café with frontage onto the proposed station square (part of the Hub project); and Part B: Access improvements on both sides of the station including: a new north side lift onto the public footbridge, providing step free access across the railway as well as to platforms from the north side; a bike hire facility; and urban realm, walking and cycle improvements on the south side; improvement works to the bus interchange/turning point within the station forecourt.

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	The scheme will deliver very significant benefits to business users and transport providers. The decongestion impact of mode shift from car to rail is estimate at £1.45m but the principle impact will be through attraction of additional rail revenue. Although the majority of this will transfer to central government through future franchises it remains an important impact for transport providers and is shown under this category for simplicity. An overall large beneficial impact is identified.	Value of journey time changes(£): N/A Net journey time changes (£): 0 to 2min: N/A; 2 to 5min: N/A; > 5min: N/A	Large Beneficial	£10,335,000	Not assessed - screened out at initial screening
	Reliability impact on Business users	The scheme will have a negligible impact on the reliability of travel. An assessment has therefore been screened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
	Regeneration	The scheme forms part of the wider Chippenham Station Hub scheme which will deliver significant regeneration impacts. Phase 1 will help unlock these impacts but the benefit lies with the full scheme and not Phase 1 (a necessary division to avoid double counting benefits). The Phase 1 impact is therefore considered to be negligible and an assessment has therefore been screeened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
	Wider Impacts	The scheme forms part of the wider Chippenham Station Hub scheme which will deliver significant wider impacts. Phase 1 will help unlock these impacts but the benefit lies with the full scheme and not Phase 1 (a necessary division to avoid double counting benefits). The Phase 1 impact is therefore considered to be negligible and an assessment has therefore been screeened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
Environmental	Noise	The scheme will have a negligible impact on noise in the surrounding area. The scheme does not include any key additional generators of noise in comparison to existing generators of noise and the additional lift and small number of additional vehicle trips to the station will both have only an extremely modest impact, insignificant compared to the existing situation. An assessment has therefore been screened out.	Not assessed - screened out at scoping stage	Negligible	N/A	Not assessed - screened out at initial screening
	Air Quality	The scheme will have a very slight impact on air quality through mode shift from car to rail. However, these are so small as to be negligible. There is no Air Quality Management Area within Chippenham and the local air quality impact is also considered to be negligible. An overall slight benefical impact is concluded.	Monetary assessment only using marginal external costs method	Slight Beneficial	£1,000	Not assessed - screened out at initial screening
	Greenhouse gases	The scheme will have a slight impact on greenhouse gas emissions through mode shift from car. The high average travel distances of trips by rail increase the reduction in carbon emissions relative to the number of journeys but the overall impact remains slight. An overall slight beneficial impact is concluded.	Change in non-traded carbon over 60y (CO2e): N/A Change in traded carbon over 60y (CO2e): N/A	Slight Beneficial	£221,000	
	Landscape	The scheme will have a negligible impact on the landscape of the area. There is no significant landscaping around the station, with only a limited number of trees, and despite the ground dropping steeply away to the south, the area around the station itself is flat and is largely screened from the wider area by surrounding buildings. An assessment has therefore been screened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
	Townscape	The scheme lies within a conservation area but the immediate surroundings are mostly surface car parks and commercial buildings around the historic station itself. The historic station buildings have an important role in the cultural identity of the area but any slight adverse impact on these is offset by slight beneficial impact on the general appearance of buildings in the area as a result of the scheme. A neutral overall impact is therefore concluded.	Qualitative assessment only using 5 Step Environmental Capital Approach and Townscape Impact Appraisal worksheet	Neutral	N/A	
	Historic Environment	The scheme lies within a conservation area and with a number of listed buildings including a railway office built by IK Brunel. The majority of these heritage assets will not be impacted with only a slight adverse impact resulting from the impact on the setting, context and form of the station building itself. A slight adverse overall impact is concluded.	Qualitative assessment only using 5 Step Environmental Capital Approach and Historic Environment Impact Appraisal worksheet	Slight Adverse	N/A	
	Biodiversity	The scheme will have a negligible impact on biodiversity in the area. It will not lead to the loss or addition of any vegetation or habitat and is wholly contained within the station curtilage. An assessment has therefore been screened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
	Water Environment	The scheme will have a negligible impact on water environment in the area. It will not alter the drainage or lead to a change in the type or quantity of water entering the drainage system. There are also no potential contaminants associated with the scheme. An assessment has therefore been screened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
Social	Commuting and Other users	The scheme will deliver significant benefits to commuters and other users. The decongestion impact of mode shift from car to rail is estimated at £1.45m although this may well underestimate the benefit for commuters travelling at peak times. The scheme will also deliver unquantified additional benefits for these travellers through improved journey quality as set out below. A moderate beneficial impact is concluded.	Value of journey time changes(£): N/A Net journey time changes (£): 0 to 2min: N/A; 2 to 5min: N/A; > 5min: N/A	Moderate Beneficial	£1,052,000	Not assessed - screened out at initial screening
	Reliability impact on Commuting and Other users	The scheme will have a negligible impact on the reliability of travel. An assessment has therefore been screened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
	Physical activity	The scheme will have a negligible impact on physical activity. The scheme will attract some additional rail patronage but an increase in physical activity in one area is likely to be off set in another by other modes of travel to the station. An assessment has therefore been screeened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
	Journey quality	The scheme will have a significant impact on journey quality as a result of improved station environment. This will include journey quality impacts from the improved booking hall and café, along with greater staff presence, cleaner facilities and generally more pleasant environment. This will benefit existing and new users alike and an overall moderate beneficial impact is concluded.	Qualitative assessment only using Journey Quality Impact Appraisal worksheet	Moderate Beneficial	N/A	
	Accidents	The scheme will lead to a small reduction in non-user accidents from the mode shift from car to rail and reduction in car kms. Localised accident impacts are considered to be negligible. An overall slight beneficial impact is concluded.	Monetary assessment only using marginal external costs method	Slight Beneficial	£579,000	Not assessed - screened out at initial screening
	Security	The scheme will have a significant impact on security at the station as a result of the restricted access to the station, delineated entrances and increased staffing. Past experience with other scheme has demonstrated a large impact with these interventions and the number of affected users is high. An overall moderate beneficial impact is concluded as much of the benefit will be delivered in the Do Minimum as well.	Qualitative assessment only using Security Impact Appraisal worksheet	Moderate Beneficial	N/A	Not assessed - screened out at initial screening
	Access to services	The scheme will have some impact on access to services by providing better access to the station and the services this can enable travel to. However, the primary impact will result from the provision of a lift on the north side of the railway providing step free access from that side of the railway. This access is largely dealt with through the severance assessment and so will not be assessed under access to services to avoid duplicating benefits.	Not assessed - screened out at scoping stage	Screened Out	N/A	Not assessed - screened out at initial screening
	Affordability	The scheme will have no impact on the affordability of travel other for fare evaders. An assessment has therefore been screened out.	Not assessed - screened out at scoping stage	Screened Out	N/A	Not assessed - screened out at initial screening
	Severance	The scheme will reduce severance for mobility impaired users by providing step free access across the railway which is otherwise a significant barrier.Alternative routes across the railway are limited (use of stairs or long slopes) and there is no step free access to the station from the north despite the presence of important services either side. An overall moderate beneficial impact is concluded.	Qualitative assessment only using Severance Impact Appraisal worksheet	Moderate Beneficial	N/A	Not assessed - screened out at initial screening
	Option and non-use values	The scheme will not substantially change the availability of public transport services in Chippenham or its surrounding area. An assessment has therefore been screened out.	Not assessed - screened out at scoping stage	Negligible	N/A	
Public Accounts	Cost to Broad Transport Budget	The scheme will incur a significant level of cost both in initial investment and future renewals work to the broad transport budget. In practise this will be more than offset by transfer of revenue associated with the scheme to central government through future franchises but the basic cost to the broad transport budget is shown for clarity. An overall moderate adverse is concluded.	Capital cost	Moderate Adverse	£2,778,000	
	Indirect Tax Revenues	the scheme will lead to a reduction in indirect tax revenue due to the mode shift from car to rail and reduction in car kms. An overall slight adverse is concluded.	Negative revenue due to the reduction in vehicle km's	Slight Adverse	-£760,000	

Subject to First Group and GWR approvals

Great Western Railway

Chippenham Station Hub
Phase 1 TEE / PA / AMCB tables

Title:

Chippenham Station Hub

Phase 1 TEE / PA / AMCB tables

Date:

12/06/2017

Location:

Chippenham Station

Information:

This report sets out the TEE / PA / AMCB tables undertaken on the Chippenham Station Hub Phase 1 scheme. Further detail may be found in the accompanying Modelling and Appraisal Report

DfT Revenue Transfer adjusted versions

1. Transport Economic Efficiency table (1)

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	526		526			
Vehicle operating costs	0					
User charges	0					
During Construction & Maintenance	0					
NET NON-BUSINESS BENEFITS: COMMUTING	526	*(1a)*	526	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	526		526			
Vehicle operating costs	0					
User charges	0					
During Construction & Maintenance	0					
NET NON-BUSINESS BENEFITS: OTHER	526	*(1b)*	526	0	0	0

Business								
User benefits			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
Travel time	1052			1052				
Vehicle operating costs	0							
User charges	0							
During Construction & Maintenance	0							
Subtotal	1052	*(2)*	0	1052	0	0		0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	9952						9952	
Operating costs	-669							-669
Investment costs	0							
Grant/subsidy	-9284						-9284	
Subtotal	0	*(3)*			0	0	669	-669
Other business impacts								
Developer contributions	0	*(4)*	0		0	0		0
NET BUSINESS IMPACT	1052	*(5) = (2) + (3) + (4)*						

TOTAL		
Present Value of Transport Economic Efficiency Benefits (TEE)	2103	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

2. Public Accounts table (1)

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Funding						
Revenue	0					
Operating Costs	0					
Investment Costs	0					
Developer and Other Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	0	*(7)*	0	0	0	0
Central Government Funding: Transport						
Revenue	0					
Operating costs	0					
Investment Costs	2778					2778
Developer and Other Contributions	0					
Grant/Subsidy Payments	-9284				-9284	
NET IMPACT	-6505	*(8)*	0	0	-9284	2778
Central Government Funding: Non-Transport						
Indirect Tax Revenues	760	*(9)*			760	
TOTALS						
Broad Transport Budget	-6505	*(10) = (7) + (8)*				
Wider Public Finances	760	*(11) = (9)*				

negative numbers.

All entries are discounted present values in 2010 prices and values.

3. Analysis of Monetised Costs and Benefits table (1)

Analysis of Monetised Costs and Benefits

Noise	0	*(12)*
Local Air Quality	0	*(13)*
Greenhouse Gases	221	*(14)*
Journey Quality		*(15)*
Physical Activity		*(16)*
Accidents	579	*(17)*
Economic Efficiency: Consumer Users (Commuting)	526	*(1a)*
Economic Efficiency: Consumer Users (Other)	526	*(1b)*
Economic Efficiency: Business Users and Providers	1052	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-760	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	2145	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	-6505	*(10)*
Present Value of Costs (see notes) (PVC)	-6505	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	8650	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	-0.33	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Conventional Appraisal versions

1. Transport Economic Efficiency table (2)

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**		**BUS and COACH**	**RAIL**		**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**		**Passengers**	**Passengers**		
Travel time	526		526					
Vehicle operating costs	0							
User charges	0							
During Construction & Maintenance	0							
NET NON-BUSINESS BENEFITS: COMMUTING	526	*(1a)*	526		0	0		0
Non-business: Other	**ALL MODES**		**ROAD**		**BUS and COACH**	**RAIL**		**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**		**Passengers**	**Passengers**		
Travel time	526		526					
Vehicle operating costs	0							
User charges	0							
During Construction & Maintenance	0							
NET NON-BUSINESS BENEFITS: OTHER	526	*(1b)*	526		0	0		0
Business								
User benefits			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
Travel time	1052			1052				
Vehicle operating costs	0							
User charges	0							
During Construction & Maintenance	0							
Subtotal	1052	*(2)*	0	1052	0	0		0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	9952						9952	
Operating costs	-669							-669
Investment costs	0							
Grant/subsidy	0							
Subtotal	9284	*(3)*			0	0	9952	-669
Other business impacts								
Developer contributions	0	*(4)*	0		0	0		0
NET BUSINESS IMPACT	10335	*(5) = (2) + (3) + (4)*						
TOTAL								
Present Value of Transport Economic Efficiency Benefits (TEE)	11387	*(6) = (1a) + (1b) + (5)*						

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

2. Public Accounts table (2)

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Funding						
Revenue	0					
Operating Costs	0					
Investment Costs	0					
Developer and Other Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	0	*(7)*	0	0	0	0
Central Government Funding: Transport						
Revenue	0					
Operating costs	0					
Investment Costs	2778					2778
Developer and Other Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	2778	*(8)*	0	0	0	2778
Central Government Funding: Non-Transport						
Indirect Tax Revenues	760	*(9)*			760	
TOTALS						
Broad Transport Budget	2778	*(10) = (7) + (8)*				
Wider Public Finances	760	*(11) = (9)*				

numbers.

All entries are discounted present values in 2010 prices and values.

3. Analysis of Monetised Costs and Benefits table (2)

Analysis of Monetised Costs and Benefits

Noise	0	*(12)*
Local Air Quality	0	*(13)*
Greenhouse Gases	221	*(14)*
Journey Quality		*(15)*
Physical Activity		*(16)*
Accidents	579	*(17)*
Economic Efficiency: Consumer Users (Commuting)	526	*(1a)*
Economic Efficiency: Consumer Users (Other)	526	*(1b)*
Economic Efficiency: Business Users and Providers	10335	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-760	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	11428	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	2778	*(10)*
Present Value of Costs (see notes) (PVC)	2778	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	8650	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	4.11	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Subject to First Group and GWR approvals

Great Western Railway

Chippenham Station Hub Phase 1 Appraisal Specification Report

Title:

Chippenham Station Hub

Phase 1 Appraisal Specification Report

Date:

31/03/2017

Location:

Chippenham Station

Information:

This report sets out the Appraisal Specification for the Chippenham Station Hub Phase 1 scheme. Details of the Appraisal results may be found in the accompanying Appraisal Report.

Table of Contents

1 Introduction

1.1 Purpose of this report

This report sets out the specification of the appraisal report for the Chippenham Station Hub Phase 1 project.

1.2 Scheme Location and Description

Chippenham Station Hub

The Chippenham Station Hub project has been in development for several years and was originally conceived to enhance the station facilities and provide increased parking at the site, through multiple, multi-decked car parks.

In the mean-time GWR has developed the opportunity for early delivery of station and access improvements by combining them with its gateline project to create a Phase 1 scheme. This would secure the early delivery of regeneration outcomes at the station alongside the introduction of Intercity Express Trains, provide early spend of LGF funding, demonstrating a commitment to delivery, and enable the full regeneration to follow in an appropriate phased manner.

Phase 1 Scheme Overview

A number of specific measures are proposed in two parts:

Part A:

- Gatelines to all station entrances with a manned gateline on the disused main platform and remote operated gatelines in the north car park and on the public footbridge across the railway (allowing access to the lift to the operational platforms);
- New booking hall with a new entrance onto the frontage and significantly improved customer experience within the hall;
- Improved retail unit providing a high quality space for the existing café with frontage onto the proposed station square (part of the Hub project); and

Part B:

- Access improvements on both sides of the station including:
    - A new north side lift onto the public footbridge, providing step free access across the railway as well as to platforms from the north side;
    - A bike hire facility;
    - Urban realm, walking and cycle improvements on the south side; and

- Improvement works to the bus interchange/turning point within the station forecourt.

The headline benefits of the proposed scheme are:

- **Significant revenue benefits to central government** from reduced ticketless travel and increased demand attributable to journey quality impacts associated with improved customer experience and security;
- **Reduced severance across the railway and improved access to facilities** for mobility impaired users resulting from the additional lift and improved cycle-rail integration;
- **Improved security for station users** from restricting access to platforms for non-rail users, increased staff presence and a general increase in footfall around the station; and
- **Catalyst for wider regeneration** (following the case study at Exeter Central) through improved security, retail, accessibility, and customer experience helping strengthen footfall around the station.
- **Enhanced overall journey experience** – by improving end to end trip making through cycle-rail integration.

1.3 Other reports

This document forms one of a number of documents prepared as part of the Outline Business Case submission:

- **Appraisal Specification Report** setting out the approach to the specification of the appraisal of economic, environmental and social indicators
- Appraisal Report setting out the findings of the economic, environmental and social appraisal
- Appraisal Summary Table summarising the findings of the appraisal process
- Outline Business Case setting out the strategic, economic, financial, commercial and management case for the scheme

2 Challenges and Issues

2.1 Strategic case

Chippenham station is operated by GWR, who also operate the train services through the station. As part of the Great Western upgrade GWR is introducing new trains offering more services, faster journey times and greater capacity. They will operate on an upgraded electrified main line being delivered by Network Rail. This rail industry investment will complement other strategic national investment by the DfT including Crossrail and Western Access to Heathrow to provide faster journey times and greater capacity for businesses to the city of London, Docklands and Heathrow airport.

Wiltshire Councils key policy documents include the Core Strategy, Chippenham Masterplan and Local Transport Plan. These set out an agenda for growth in the town with at least 4,500 additional homes by 2026, which will require a range of transport and infrastructure interventions. This growth forms a central component of the SW LEP Strategic Economic Plan which brings together plans for transport investment and economic growth into a prioritised programme of investment. The top priorities in the SEP were identified for funding for the Growth Deal including the Chippenham Station Hub project.

However, the station is not fit for purpose with a number of problems identified:

- Poor quality facilities provide a poor quality arrival experience
- Insufficient space for the retail provision
- Inadequate station security fails to control fare evasion and creates a generally less pleasant station environment;
- Lack of step free access from the north side of the railway. This restricts access to the station and causes major severance for mobility impaired users.
- The rail lines that bisect the town and the significant traffic congestion that occurs at the major crossings present a real barrier to movement across the town;
- Lack of car parking provision at the station, resulting in congestion and overspill onto local streets. This is anticipated to exacerbated by future growth in patronage;
- The area around the railway station is currently significantly under-utilised – the area is dominated by surface car parks and vacant or under-used buildings;
- Rail demand growth is expected following the electrification and upgrade of the Great Western Main Line. The facilities, access and parking at the station are already under strain; and
- The planned housing growth in Chippenham of 4,500 homes by 2026 as detailed by Wiltshire's Core Strategy, January 2015) will further boost rail demand in the town, putting more strain on the station and services.

As growth and development takes place in Chippenham, coupled with the electrification of the mainline to London from Chippenham, usage of the Railway Station is forecast to increase

significantly. Lack of investment in delivering improvements to the Railway Station area at Chippenham therefore has the potential to constrain this growth and the resulting mode shift and decongestion.

2.2 Strategic and Transport Objectives

In order to solve the problems outlined above, five SMART objectives for the Phase 1 improvements to Chippenham station have been identified. These seek to address the first four problems with the remainder to be addressed through the full Chippenham Station Hub scheme. Strong progress against all five objectives is expected by 2019/20, one year after scheme opening:

1. Improve station security through restricted access and greater staff presence;
2. Improve revenue capture and reduce rate of ticketless travel through the regulation of access to ticket holders;
3. Reduce severance across the railway through provision of step free access on the north side;
4. Provide improved accessibility at the railway station by delivering an enhanced ticket hall and improved café/retail facilities;
5. Improve accessibility to/from the station with cycling improvements and a cycle hire facility.
6. Increase customer satisfaction with an enhanced ticket hall, improved café/retail facilities and enhanced station security

2.3 Appraisal Specification

The appraisal information previously available for the scheme has been reviewed and an Appraisal Specification Summary Table, Table 1, prepared describing the proposed methodology taking account of the scale and severity of impacts identified, the level of uncertainty about estimated impacts and the focus of the local objectives.

The appraisal process is focused on 'larger' impacts (both beneficial and adverse), those where there is uncertainty about the scale of the benefit, and those which could make a difference to the overall Benefit Cost Ratio (BCR) or Value for Money (VfM) categorisation.

This process has identified transport modelling, in particular rail passenger forecasting, and economic assessment as the key elements in the VfM categorisation and the proposed methodology for these is described in detail in Sections 3 and 4. Scoping and specification of environmental, social and distributional impacts are discussed later in the report.

Type of impact		Initial Assessment	Proposed Methodology		DI
Economy	Business users & transport providers	Large Beneficial	TAG A5-3 TAG A5-4	Rail forecasting of demand and revenue with PDFH and MEC approach	
	Reliability impact on Business users	Negligible	TAG A5-3	Screened out	
	Regeneration	Negligible	TAG A2-2	Screened out	
	Wider Impacts	Negligible	TAG A2-1	Screened out	
Environmental	Noise	Negligible	TAG A3	Screened out	
	Air Quality	Slight Beneficial	TAG A3 TAG A5-4	MEC approach to monetary assessment and qualitative local assessment	
	Greenhouse gases	Slight Beneficial	TAG A3 TAG A5-4	MEC approach to monetary assessment	
	Landscape	Neutral	TAG A3	Screened out	
	Townscape	Slight Beneficial	TAG A3	Qualitative	
	Heritage of Historic resources	Slight Adverse	TAG A3	Qualitative	
	Biodiversity	Negligible	TAG A3	Screened out	
	Water Environment	Negligible	TAG A3	Screened out	
Social	Commuting and Other users	Moderate Beneficial	TAG A5-3 TAG A5-4	Rail forecasting of demand and MEC approach	
	Reliability impact on Commuting and Other users	Negligible	TAG A5-3	Screened out	
	Physical activity	Negligible	TAG A4-1	Screened out	
	Journey quality	Slight Beneficial	TAG A4-1	Qualitative	
	Accidents	Slight Beneficial	TAG A4-1 TAG A5-4	MEC approach to non-user impact and user impact screened out	
	Security	Moderate Beneficial	TAG A4-1	Qualitative	
	Access to services	Slight Beneficial	TAG A4-1	Screened out	
	Affordability	Neutral	TAG A4-1	Screened out	
	Severance	Moderate Beneficial	TAG A4-1	Qualitative	
	Option values	Neutral	TAG A4-1	Screened out	
Public Accounts	Cost to Broad Transport Budget	Moderate Adverse	TAG A1-2	Standard treatment of costs with rail assumptions applied	
	Indirect Tax Revenues	Moderate Adverse	TAG A5-4	MEC approach to monetary assessment	

3 Transport Modelling

3.1 Existing Knowledge and Data

GWR has detailed information on station usage and revenue at Chippenham station from the Lennon database. This is based on an analysis of ticket sales at the station and is a standard rail industry tool for understanding demand and revenue. GWR also has existing survey information on passenger views on the facilities which is available both to help add validity to assumptions and provide a monitoring tool. Other key data and information is available from WebTAG, Passenger Demand Forecasting Handbook and the Western Route Study.

A summary of existing available data is as follows:

Table 1 Available data sources

Data	Source	Comments
Historic Footfall	ORR	Provides historic demand
Current Footfall	Lennon	Provides current demand
Top Flows	Lennon	Provides a distribution of demand and allows average trip length to be calculated
Yield	Lennon	Provides current average yield
NRPS	GWR	Provides measure of customer satisfaction
CSM	GWR	Provides measure of customer satisfaction
Western Route Study	NR	Provides industry wide forecasts of underlying demand growth applying PDFH principles
TAG Databook	WebTAG	Provides a range of data on appraisal parameters
PDFH	RDG	Provides industry wide guidance and assumptions on the demand impact of service, station and fares interventions

Reviewing these data sources in more detail demonstrates that station footfall was 1.815m in 2015/16 a slight decrease on the previous year, due to the six-week closure of Box tunnel in summer 2015, but a 0.5m increase on 2005/06. In the last year demand has increased again and was 1.899m in the last 12 months. A more detail review of the top flows indicates that the top 20 flows to/from account for 93% of this demand. These top 20 are shown in the table below.

Table 2 Top 20 demand flows

From/To	Demand Flow	Equivalent Highway Distance (miles)
Bath Spa	635589	14
London BR	390600	98
Bristol Temple M	292890	27

Swindon Wilts	226792	20
Didcot Parkway	64556	55
Reading	23498	58
Trowbridge	21767	14
Filton Abbey Wood	16327	24
Oxford	13667	53
Cardiff BR	11316	61
Bristol Parkway	9837	25
Melksham	8524	8
Weston-super-Mare	8305	50
Westbury	8013	17
Birmingham BR	5425	105
Keynsham	5229	21
Salisbury	4460	36
Cheltenham Spa	4071	38
Gatwick Airport	4017	120
Southampton Cent	3942	84

From this the average equivalent highway travel distance (using the highway distance shown in the table for each journey) is 39.4 miles. The average yield across all journeys is £10.75 with an average of £12.64 for business/leisure and £6.05 for commuting reflecting the influence of Swindon, Bath and Bristol on commuting as well as London.

3.2 Constraints

A range of constraints apply on the appraisal. These include:

- The approach to apply standard rail industry practise using known data sources. No separate highway modelling to be undertaken.
- No additional service changes are to be considered with the scheme (which would lead to major revenue growth not attributable to the scheme) in the Do Something case above those committed assumptions in the Do Minimum case.
- No additional fares changes are to be considered in the Do Something case above the standard DfT assumptions applied in the Do Minimum case.
- All car kms to be assumed to be removed from South West and South East. No consideration of reduction in London or elsewhere as it is not possible to accurately estimate these smaller numbers
- The environmental and social impact mostly limited to the immediate surrounds of the station except for impacts assessed through the Marginal External Cost approach.

3.3 Scale of Impact

The scheme is expected to increase rail demand at the station with the distribution of additional rail travel following the current pattern at the station. This means that the majority of additional rail travel, and reduction of car travel, will be on the London – Bristol axis with 86% of additional travel being to/from station directly on this axis. However, despite the wide geographic area, given the relatively modest nature of the interventions it is expected the total demand impact will remain moderate, albeit the relatively high station yields are likely to make the revenue impact large.

For wider social and environmental impacts the scale of impact is expected to be slight to moderate. With the exception of accident, air quality and greenhouse gas emissions, which are expected to have a slight, albeit mostly very small, impact throughout the London – Bristol axis, other social and environmental impacts are expected to be limited to the immediate station surrounds. The red line on figure 1 sets out the study area for these impacts.

Figure 1 Study area for environmental and social impacts

3.4 Additional Data requirements

There are no additional data requirements to complete this appraisal

3.5 Proposed Rail Forecasting Methodology

The proposed forecasting methodology follows a three step approach to establish the: Base/Do Minimum level of future demand; demand impact of planned interventions and; highway impact of planned interventions. This is set out in more detail below:

Step 1: Base/Do Minimum scenario demand forecasts

A Do Minimum forecast of future year demand will be developed encompassing underlying demand growth and the impact of committed schemes (including IET introduction and service enhancements). The underlying rate of demand growth will be taken from the Western Route study, at 3.4% per annum to 2023 and 2.3% per annum thereafter, which is broadly in line with 38% growth in the ten years to 2015/16. The impact of committed interventions, estimated from PDFH and MOIRA, will be overlaid on top as a one off uplift for 2019. This is considered to be appropriate as, although the Western Route study theoretically assumed the impact of electrification, in practise GWRs train plan includes further improvements, including additional peak services and faster journey times, and an overlay is necessary to reflect this. A 2.4% uplift for the new trains impact has been derived from PDFH and a 1.6% uplift for the timetable impact has been taken from a MOIRA run for the March 2019 timetable, giving a one off uplift of 4% for 2019. All demand growth will be capped 20 years from the current year in accordance with current WebTAG guidance (Unit A5.3 Para 2.3.1).

Step 2: Do Something scenario (Intervention) demand forecasts

A Do Something forecast of future year demand will be developed encompassing the impact of the planned interventions delivered by the scheme. The GWR Revenue forecasting team has derived a PDFH based method to estimate the demand impact of the different types of interventions including station and access improvements.

For the booking hall improvement several important benefits have been identified including a better ticket office providing easier access to ticket purchase, easier access to staff and a greater feeling of security. The increased willingness to pay for a ticket office facility from PDFH, converted to 2016/17 levels, applied with appropriate fare elasticities, and the demand uplift for each market segment from PDFH for security and staff presence have therefore been identified. Cautious assumptions are proposed about the relative scale of impact with only 10% of the PDFH values applied in each case to reflect the relative impact of the modest upgrade from an already staffed station. A similar approach is proposed for the improved café and in each case, reflecting the scale of likely impact, only 10% of the potential impact will be applied. This is because the relative impact, compared to a new facility where there is none, is only modest.

A cautious assumption of a 2% uplift for cycle parking and for a new lift are proposed applied to the relevant market section. In the case of cycle parking this is taken as 10% of originating passengers potentially choosing to cycle and in the case of the lift 5% of passengers are assumed as mobility impaired (including disabled, elderly, adults with children, passengers with luggage) with 50% of these potentially benefiting from the lift.

Full details of these proposed assumptions and their derivation from PDFH are set out in table 3 below.

Table 3 Parameters to estimate demand uplifts from interventions at Chippenham station

Intervention		Assumptions			Total demand uplift
Station improvements		PDFH V5.1	Business / leisure	Commuting	Percentage applied	Demand uplift
		C8.4	WTP – 8.6p *(2016/17 price)*		10%	0.07%

Booking hall benefits	Ticket office facility		Fare elasticity: -0.6	-1		
	Security	C8.15	10.10%	6.00%	10%	0.89%
	Staff presence	C8.14	9.20%	5.5%	10%	0.81%
Café		C8.1	WTP – 74p *(2016/17 price)* Fare elasticity: -0.6	-0.6	10%	0.61%
Access improvements		Source	Uplift	Affected journeys		Demand uplift
Forecourt	Cycle parking	Assumed	2%	10%		0.2%
Lift	Lift	Assumed	2%	5% mobility impaired customers and 50% of these affected		0.05%

The total impact of these interventions together, estimated at 2.64% using the above approach will be applied as a one off uplift spread over 2018 and 2019 reflecting the planned delivery of the improvements. Using subtraction of the Do Minimum from the Do Something scenario will provide an estimate of the scheme impact for all future years.

Step 3: Do Something scenario highway impact

The reduction in highway vehicle kms will be estimated from the output of step 2. A standard diversion factor taken from TAG Unit A5.4 Table 1 and repeated below for clarity of 26% for the diversion rate from private car driver to rail is proposed to estimate the number of vehicle trips the highway network. Note there would be other rail passengers diverted from car but these would either be car passengers, and hence not a vehicle trip itself, or indeed abstracted from other stations.

Table 4 National average diversion factors

National average diversion factors from the National Transport Model						
Change in Distance travelled by mode as % of change in rail passenger kms	Walk	Cycle	Car driver	Car passenger	Bus	Total kms travelled
	-0.47%	-0.46%	-26%	-20%	-7.4%	46%

The equivalent average highway travel distance, established in section 3.1 above at 39.4 miles or 63 kms, will be applied to derive the change in highway kms. It is proposed to use further analysis of the top 20 demand flows in section 3.1 to identify the proportion of the reduction in car kms in the South East and South West. For this purpose, and for simplicity, it is assumed that all car kms east of Swindon are in the South East and all other car kms are in the South West. In practise a small reduction in car kms is also expected elsewhere in South Wales and the Midlands however this is not expected to be significant and so will not be separately considered. An initial completion of this analysis shows that the distribution is almost exactly even with 49.998% of car kms in the South West and 50.002% in the South East.

3.6 Sensitivity scenarios

Several additional sensitivity scenarios will be considered to reflect potential uncertainties with assumptions made in the central case. These are set out in table 5 below along with a proposed modelling approach.

Table 5 Proposed sensitivity scenarios

Sensitivity	Modelling approach
1. Lower underlying demand growth – underlying rate reduced by 50%	The underlying growth rate will be reduced by 50%. This represents a slowing of overall rail demand for macro-economic factors, such as a decrease in GDP growth or fuel prices, or a relative increase in the attractiveness of competitors
2. Higher population growth impact – applied on top of underlying rate	The % additional population increase attributable to new houses up to 2026 has been applied as an uplift to origin journeys from within the town. This represents the additional demand from population growth arising on top of underlying growth not as part of it.
3. Higher costs – 50% increase in capex and opex costs	The capital, operations, maintenance and renewals costs will be increased by 50%.

4 Economic Assessment

4.1 General Approach

The general approach to economic appraisal will follow WebTAG guidance in including TAG Unit 5.3 guidance on rail appraisal and Tag Unit A1.1 cost benefit analysis.

4.2 Parameters of the economic assessment

The basic parameters of the assessment will follow standard practise with appraisal over a 60 year appraisal period and a base year for pricing in real terms of 2010. Discounting will be undertaken at the rate of 3.5% for 30 years from the current year and 3% thereafter and all costs and benefits will be presented in market prices. Assumptions on inflation measures, including RPI growth and the GDP deflator, and earnings growth will be taken from the TAG Databook March 2017.

4.3 Estimation of scheme benefits

Revenue

In general terms the approach to estimating additional revenue is proposed to follow the standard industry method of applying current average yield at the station to the incremental demand from subtracting the Do Minimum from the Do Something case. Only new to rail demand will be considered and this will be derived by applying the diversion factor from other modes given in TAG Unit A5.4. Current average yield is £10.75 and it will be assumed that the intervention will not change this either through a change in the market segments or average trip length.

Additional revenue incurred through the reduction in ticketless travel will not be modelled as this forms part of the Do Minimum case and is not incremental.

Revenue growth will be capped after 20 years from current year in line with the cap on demand growth and current guidance (WebTAG Unit A5.3 Para 2.3.1). Fares growth will thus also be capped at this point. Prior to this point RPI+1 will be assumed except between 2013 and 2021 as it current policy to restrict fare increases to RPI until 2020 at the earliest. Nominal fare increases will be converted to real terms using the GDP deflator.

Marginal External Costs

To estimate scheme benefits accruing from the modal shift from car to rail the Marginal External Cost approach is proposed following the guidance in TAG Units A5.3 and A5.4. Values of external costs have been taken from TAG Databook A5.4.2 and A5.4.4. A weighted value for congestion is proposed taken from the proportion of car kms removed in the South East and South West as set out in section 3.5 above. Estimates of these benefits will be produced for each year monetary values are available and then interpolated between.

Table 6 MEC values proposed for valuation of non-user benefits

MEC Values (2010 prices)						
MEC Values (pvkm)	2015	2020	2025	2030	2035	Weighting
Congestion (South East)	6.4	8.4	11	14.1	18.6	50.002%
Congestion (South West)	4.1	5.2	6.5	7.7	9.7	49.998%
Weight Congestion	5.3	6.8	8.8	10.9	14.2	
Accidents	1.7	1.9	2	2.2	2.5	
Local Air Quality	0.1	0	0	0	0	
Greenhouse gases	0.8	0.7	0.7	0.7	1	
Indirect taxation	-4.1	-3.6	-3.1	-2.9	-2.9	

4.4 Estimation of scheme costs

Scheme costs will be estimated and treated in accordance with WebTAG Unit A1.2. This includes the application of appropriate risk and optimism bias factors as recommended for rail schemes in WebTAG Unit A5.3 and the conversion of all costs from factor to market prices.

Capital costs

The initial capital costs will be estimated from the GRIP4+ estimates available for the Part A scheme and a pre-GRIP estimate prepared by GWR for the Part B scheme. This is because the Phase 1 scheme has been conceived as an opportunity to deliver additional outputs as part of the GWR works that form the backbone of Part A, and some elements are therefore only at an early stage of development.

Appropriate levels of optimism bias will be applied to each part based on Table 8 of TAG Unit A1.2.

Staff costs

Additional staff costs over and above the Do Minimum case will not accrue as a result of the scheme.

Maintenance and renewals

Maintenance costs will be estimated from the additional maintenance costs accruing for the new assets, principally the lift. These costs will be estimated from GWR experience elsewhere. It is assumed that other maintenance costs will remain largely the same as today and will not be estimated. For the lift an optimism bias of 41% will be applied to the discounted maintenance cost reflecting the earlier stage of development on the Part B works. Renewals costs will be estimated for the new assets once more. These costs will be estimated from a combination of the relevant asset components of the scheme estimate and GWR experience elsewhere. An optimism bias of 50% will be applied to the renewals costs.

4.5 Economic Appraisal Outputs

The economic assessment of the scheme will use the costs and benefits set out previously to undertake a conventional transport economic appraisal on the value for money of the scheme over 60 years as set out at the start of this section. The majority of benefits are expected to accrue from additional passenger revenue resulting from the incremental demand attracted by the scheme and the decongestion impact on the highway network.

A summary of the economic appraisal will be presented encompassing:

- Present Value of Costs
- Present Value of Benefits
- Net Present Value
- Benefit Cost ratio
- Value for Money category

In support of the appraisal standard DfT reporting sheets will include:

- Transport Economic Efficiency table
- Public Accounts table
- Analysis of Monetised Costs & Benefits table
- Appraisal Summary table

5 Environmental Assessment

5.1 General Approach

The general approach to environmental assessment will follow the guidance provided by TAG Unit A3 Environmental Impact Appraisal. This sets out guidance for the scoping and quantitative assessment of noise, air quality and greenhouse gases.

For all other categories of environmental impacts the guidance recommends an Environmental Capital Approach. This consists of a 5 step approach to assessment as follows:

- Step 1: Scoping and identification of study area
- Step 2: Identifying key environmental resources and describing their features
- Step 3: Appraise environmental capital
- Step 4: Appraise the proposal's impact
- Step 5: Determine the overall assessment score

This section therefore sets out the scoping stage for each category so that further assessment may either be specified or screened out.

5.2 Noise

The study area for noise impact is the area around the station itself as defined in figure 1. The scheme does not include any key additional generators of noise in comparison to existing generators of noise such as train movements and traffic. The additional lift and small number of additional vehicle trips to the station will both have only an extremely modest impact. Each of these are insignificant compared to the existing situation and the overall impact is therefore considered to be negligible. An assessment of noise impacts has therefore been screened out of the assessment. A qualitative statement will be provided and the qualitative value stated as negligible in the AST table but no quantitative or monetary assessment given.

5.3 Air Quality

Air Quality impacts are expected from the scheme as a result of the mode shift to rail. Two types of impacts are anticipated: local air quality impacts as a result of additional driving to the station; and wider air quality impacts as a result of a reduction in overall car kms. However, there is no Air Quality Management Area within Chippenham and any additional local trips to the station are likely to be offset by a corresponding reduction in other trips. Local air quality impacts are therefore considered to be negligible and will not be subject to any further assessment. For wider air quality impacts further assessment is proposed using the marginal external costs approach and a monetary value will be established. Overall the impact is expected to be slight.

5.4 Greenhouse gases

Greenhouse gas impacts are expected from the scheme as a result of mode shift to rail. These are expected to be slight but the moderate anticipated change in car kms still make them worthy of assessment. Further assessment through the marginal external cost approach is therefore proposed to assess them and establish a monetary value. Overall the impact is still expected to be slight.

5.5 Landscape

Step 1:

The study area for the scheme in relation to landscape is defined by the area within the visual setting of the station buildings. This is the same as for townscape and can be seen in figure 2. However, within this area there is no significant landscaping, with only a limited number of trees screening the council car park in the South East corner. Moreover, despite the ground dropping steeply away to the south down Monkton Hill, the area around the station itself is flat and is largely screened from the wider area by surrounding buildings. There is therefore considered to be only negligible impact on landscape from the scheme.

Further assessment of landscape impact is therefore screened out and the scheme will not proceed to Step 2 – 5 of the Environmental Capital Approach for landscape.

5.6 Townscape

Step 1:

The study area for the scheme in relation to townscape is defined by the area within the visual setting of the station buildings. This is shown in figure 1 below.

Figure 2 Townscape Study Area

The whole of this area forms part of the Chippenham Conservation area as demonstrated in figure 3. It also contains a number of listed buildings but largely consists of surface car parks surrounding the historic station buildings and bounded by a number of commercial buildings. It is worthy of further assessment to consider both the potential beneficial and adverse impacts on the town scape.

The study area should therefore proceed to **Step 2 - 5** of the Environmental Capital Approach using the TAG townscape worksheet.

5.7 Heritage of Historic resources

Step 1:

The study area for the scheme in relation to historic resources is the same as that for townscape. The whole of this study area sits within the Chippenham Conservation area, which covers the whole of Chippenham town centre and surrounding areas of significance.

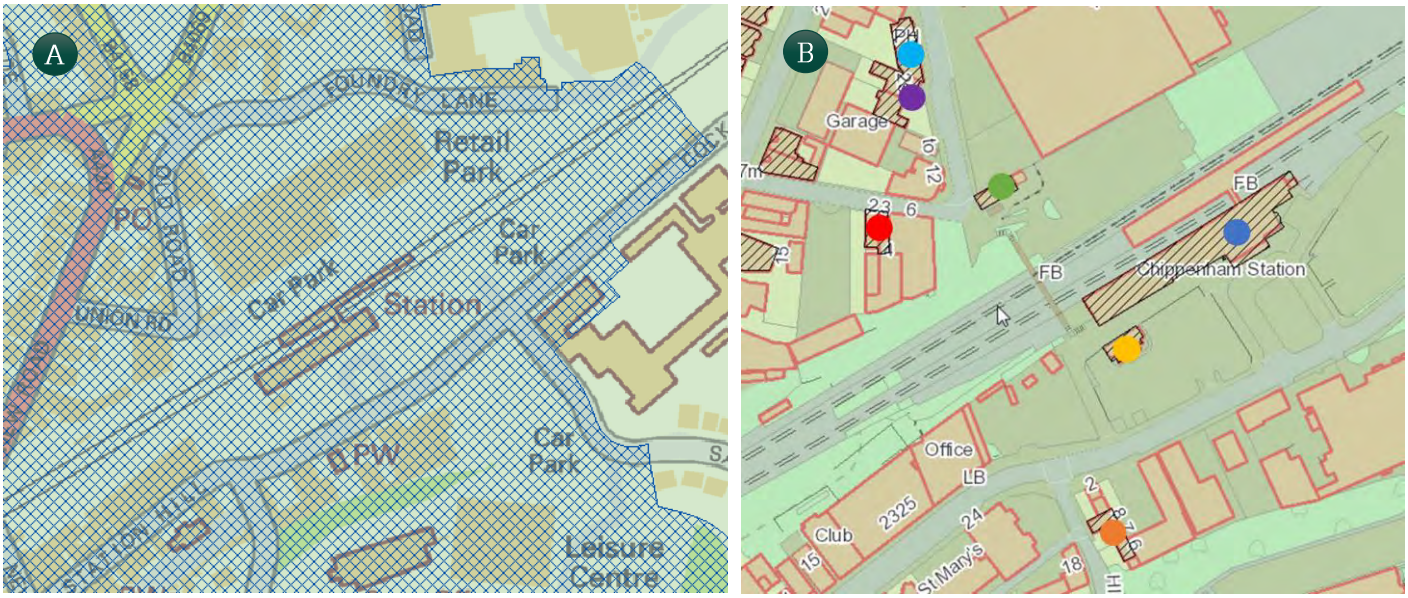


Figure 3: A. Chippenham Conservation area (hatched); B. Listed buildings in the study area

Within the study area lies a range of historic buildings including seven listed buildings and the Great Western Railway main line itself which was constructed by IK Brunel and opened for the first service between London and Bristol in 1841. The listed buildings include a railway office from this time which was reputedly Brunel's drawing office. They also include the station buildings, with the complex of non-listed canopies and steps and bridge spans, and a similar period weighbridge. Outside the station the earliest building in the study area is the late 17th/early 18th century cottages on Monkton Hill. Listed buildings to the north side include several dwellings and the Old Road Tavern from the 19th century. These are set out in table 7.

Table 7 Listed buildings within study area

Listed Buildings	Grade	Description

CHIPPENHAM STATION, ENTRANCE BUILDING AND ATTACHED PLATFORM CANOPIES	2	Station building. 1856-8, for the Great Western Railway. By Rowland Brotherhood, engineer. Limestone ashlar with a plinth and eaves band; shallow-pitched hipped slate roof and moulded stack to the right. 2 blocks, both rectangular plan.
CHIPPENHAM STATION, FORMER BRITISH RAIL OFFICE IN THE CAR PARK	2	Railway office. c1840. By Isambard K Brunel, engineer, for the Great Western Railway. Limestone ashlar, shallow-pitched hipped slate roof with wide eaves, tall moulded stacks to end walls. Rectangular plan.
6 AND 7, MONKTON HILL	2	Two cottages, (formerly 3 cottages). Late C17/early C18. Limestone rubble with freestone quoins and dressings, double-Roman tile roof, stone stack with brick shaft to the left gable end of the right-hand cottage, C20 brick stack to front slope of the gable end to the left-hand cottage. Each cottage is 2-unit plan, the cottage to the left, now part of No.6, is at a right angle to the street. To the right is a C20 lower extension.
MORTIMORES WEIGHBRIDGE OFFICE, CHIPPENHAM STATION YARD	2	Weighbridge office. Mid C19. Limestone rubble ground floor with timber-framed painted weather-boarded 1st floor and returns, slate roof with brick stack. Rectangular plan.
2 AND 3, UNION ROAD	2	Two shops, now one office. Early/mid C19. Limestone ashlar, shallow-pitched slate roof. Double-depth plan.
22 AND 23, NEW ROAD	2	Also known as: Nos.22 AND 23 OLD ROAD. Pair of houses with entrances in Old Road. Mid C19, No.23 to the left, enlarged late C19. Limestone ashlar to the front, rubblestone and render to the rear, shallow-pitched slate roof with a coped gable to the right, late C19 block to the left has a hipped roof to the front, crested and gabled to the rear with an ashlar stack to the left return.
OLD ROAD TAVERN	2	Public house, built in 2 stages. Early and late C19. Limestone ashlar, rusticated to the front, slate roof with ashlar stacks to gable ends and former gable end (now a ridgestack). Double-depth plan.

The listed buildings set out in table 7 may be grouped into two key historical environmental resources:

- Listed station buildings *(including station building, railway office and weighbridge office)*
- Surrounding listed buildings *(including residences on Monkton Hill, New Road, Union Road and Old Road Tavern)*

These two resources should proceed to **Step 2 - 5** of the Environmental Capital Approach using the TAG historic environment worksheet.

5.8 Biodiversity

Step 1:

The scheme will have no impact on biodiversity positive or negative. It will neither remove vegetation nor increase it and will take place largely within the fabric of existing buildings and wholly within the station demise. There is therefore considered to be a neutral impact on biodiversity from the scheme.

Further assessment of biodiversity impact is therefore screened out and the scheme will not proceed to **Step 2 – 5** of the Environmental Capital Approach for biodiversity.

5.9 Water Environment

Step 1:

The scheme will have no impact on water environment positive or negative. It will have no impact on drainage with only very minor changes from the collection of rainfall on two additional roofs vice the hard surfacing below. No additional surface or foul water will be generated by the scheme and all existing will continue to collect and drain according to its present arrangements. There is therefore considered to be a neutral impact on water environment from the scheme.

Further assessment of water environment impact is therefore screened out and the scheme will not proceed to **Step 2 – 5** of the Environmental Capital Approach for water environment.

5.10 Summary of Environmental

A summary of the proposed assessment approach is as follows:

Environmental	Initial assessment	Assessment
Noise	Neutral	Screened out – no further assessment required
Air Quality	Slight Beneficial	Assessment using MEC tool
Greenhouse Gases	Slight Beneficial	Assessment using MEC tool.
Landscape	Neutral	Screened out – no further assessment required
Townscape	Slight Beneficial	Step 2 – 5 assessment using townscape worksheet
Historic Environment	Slight Adverse	Step 2 – 5 assessment using historic environment worksheet
Biodiversity	Neutral	Screened out – no further assessment required
Water Environment	Neutral	Screened out – no further assessment required

6 Social Assessment

6.1 General Approach

The general approach to social impact assessment will follow the guidance provided by TAG Unit A4.1 Social Impact Appraisal. This sets out guidance for the scoping and assessment of all categories of social impact.

The unit sets out methods to undertake a quantitative or qualitative assessment of social impacts. However, some impacts may be scoped out of the assessment and in defining the assessment it is important to apply a proportional approach.

This section therefore sets out the scoping stage for each category so that further assessment may either be specified or screened out.

6.2 Physical activity

The scheme will have a negligible impact on physical activity. This is because although the scheme will attract some additional rail patronage this will also involve travel to the station by a number of modes as well as mode shift from a number of modes. The overall impact is therefore negligible as an increase in physical activity in one area is likely to be off set in another.

An assessment of physical activity benefits has therefore been screened out of the assessment. A qualitative statement will be provided and the qualitative value stated as negligible in the AST table but no quantitative or monetary assessment given.

6.3 Journey quality

The scheme will have a significant impact on journey quality as a result of improved station environment. This will include journey quality impacts from the improved booking hall and café, along with greater staff presence, cleaner facilities and generally more pleasant environment. This will benefit existing and new users alike and is considered to have a moderate or large level of impact.

A qualitative assessment using the TAG journey quality worksheet is therefore proposed. A qualitative statement will be provided and the results of this assessment included in the relevant sections of the AST table.

6.4 Accidents

The scheme has the potential for two sources of accident impacts. At the station it could provide a user benefit by reducing accidents. However, given the scope of work this is considered to be negligible. An assessment of the user impact has therefore been screened out of further assessment. It will also have a small accident impact to non-users on highways as a

result of the reduction in car travel. This is considered to have a slight impact and is worthy of further assessment.

A monetary assessment of the non-user impact is therefore proposed using the marginal external costs of car use methodology as set out in TAG Unit A5.4. A qualitative statement will be provided and the results of this assessment included in the relevant sections of the AST table.

6.5 Security

The scheme will have a significant on security at the station as a result of the restricted access to the station, delineated entrances and increased staffing. This is considered to represent a moderate or large level of impact therefore warrants further assessment.

A qualitative assessment using the TAG security worksheet is therefore proposed. A qualitative statement will be provided and the qualitative value based on the assessment stated in the AST table but no quantitative or monetary assessment given.

6.6 Access to services

The scheme will have some impact on access to services by providing better access to the station and the services this can enable travel to. However, the primary impact will result from the provision of a lift on the north side of the railway providing step free access from that side of the railway. This access is largely dealt with through the severance assessment and so will not be assessed under access to services to avoid duplicating benefits. The remaining impact of the scheme on access to service is therefore considered to be negligible.

An assessment of access to services has therefore been screened out of the assessment. A qualitative statement will be provided and the qualitative value stated as negligible in the AST table but no quantitative or monetary assessment given.

6.7 Affordability

The scheme will have no impact on affordability of public transport other than for fare evaders. The overall impact is therefore neutral.

An assessment of affordability has therefore been screened out of the assessment. A qualitative statement will be provided and the qualitative value stated as neutral in the AST table but no quantitative or monetary assessment given.

6.8 Severance

The scheme will have a significant impact on severance across the railway but only for mobility impaired users. Due to the limited number of affected individuals the impact is therefore likely to be moderate. However, this warrants an assessment of the impact on these groups on both sides of the railway for access across and access from the north to the station.

A qualitative assessment using the TAG severance worksheet is therefore proposed. A qualitative statement will be provided and the qualitative value based on the assessment stated in the AST table but no quantitative or monetary assessment given.

6.9 Option values

The scheme will have a negligible impact option values. This is because the scheme will neither fundamentally increase or decrease public transport options for Chippenham. The overall impact is therefore neutral.

An assessment of option value has therefore been screened out of the assessment. A qualitative statement will be provided and the qualitative value stated as neutral in the AST table but no quantitative or monetary assessment given.

6.10 Summary of Social Impact

A summary of the proposed assessment approach is as follows:

Social	Initial assessment	Assessment
Physical Activity	Negligible	Screened out – no further assessment required
Journey Quality	Moderate Beneficial	Assessment using journey quality worksheet and PDFH/WebTAG guidance
Accidents	Slight Beneficial	Assessment using MEC tool
Security	Moderate Beneficial	Assessment using security worksheet
Access to Services	Negligible	Screened out – no further assessment required
Affordability	Neutral	Screened out – no further assessment required
Severance	Moderate Beneficial	Assessment using severance worksheet
Option Values	Neutral	Screened out – no further assessment required

Subject to First Group and GWR approvals

Great Western Railway

Chippenham Station Hub Phase 1 Modelling and Appraisal Report

Title:

Chippenham Station Hub

Phase 1 Modelling and Appraisal Report

Date:

31/05/2017

Location:

Chippenham Station

Information:

This report sets out the Modelling and Appraisal undertaken on the Chippenham Station Hub Phase 1 scheme. Further detail on Appraisal Specification may be found in the accompanying Appraisal Specification Report

Table of Contents

1 Introduction

1.1 Purpose of this report

This report sets out the appraisal undertaken for the Chippenham Station Hub Phase 1 project.

1.2 Scheme Location and Description

Chippenham Station Hub

The Chippenham Station Hub project has been in development for several years and was originally conceived to enhance the station facilities and provide increased parking at the site, through multiple, multi-decked car parks.

In the mean-time GWR has developed the opportunity for early delivery of station and access improvements by combining them with its gateline project to create a Phase 1 scheme. This would secure the early delivery of regeneration outcomes at the station alongside the introduction of Intercity Express Trains, provide early spend of LGF funding, demonstrating a commitment to delivery, and enable the full regeneration to follow in an appropriate phased manner.

Phase 1 Scheme Overview

A number of specific measures are proposed in two parts:

Part A:

- Gatelines to all station entrances with a manned gateline on the disused main platform and remote operated gatelines in the north car park and on the public footbridge across the railway (allowing access to the lift to the operational platforms);
- New booking hall with a new entrance onto the frontage and significantly improved customer experience within the hall;
- Improved retail unit providing a high quality space for the existing café with frontage onto the proposed station square (part of the Hub project); and

Part B:

- Access improvements on both sides of the station including:
    - A new north side lift onto the public footbridge, providing step free access across the railway as well as to platforms from the north side;
    - A bike hire facility;
    - Urban realm, walking and cycle improvements on the south side; and
    - Improvement works to the bus interchange/turning point within the station forecourt.

The headline benefits of the proposed scheme are:

- **Significant revenue benefits to central government** from reduced ticketless travel and increased demand attributable to journey quality impacts associated with improved customer experience and security;
- **Reduced severance across the railway and improved access to facilities** for mobility impaired users resulting from the additional lift and improved cycle-rail integration;
- **Improved security for station users** from restricting access to platforms for non-rail users, increased staff presence and a general increase in footfall around the station; and
- **Catalyst for wider regeneration** (following the case study at Exeter Central) through improved security, retail, accessibility, and customer experience helping strengthen footfall around the station.
- **Enhanced overall journey experience** – by improving end to end trip making through cycle-rail integration.

1.3 Other reports

This document forms one of a number of documents prepared as part of the Outline Business Case submission:

- Appraisal Specification Report setting out the approach to the specification of the appraisal of economic, environmental and social indicators
- **Modelling and Appraisal Report** setting out the findings of the economic, environmental and social appraisal
- Appraisal Summary Table summarising the findings of the appraisal process
- Outline Business Case setting out the strategic, economic, financial, commercial and management case for the scheme

2 Challenges and Issues

2.1 Strategic case

Chippenham station is operated by GWR, who also operate the train services through the station. As part of the Great Western upgrade GWR is introducing new trains offering more services, faster journey times and greater capacity. They will operate on an upgraded electrified main line being delivered by Network Rail. This rail industry investment will complement other strategic national investment by the DfT including Crossrail and Western Access to Heathrow to provide faster journey times and greater capacity for busineses to the city of London, Docklands and Heathrow airport.

Wiltshire Councils key policy documents include the Core Strategy, Chippenham Masterplan and Local Transport Plan. These set out an agenda for growth in the town with at least 4,500 additional homes by 2026, which will require a range of transport and infrastructure interventions. This growth forms a central component of the SW LEP Strategic Economic Plan which brings together plans for transport investment and economic growth into a prioritised programme of investment. The top priorities in the SEP were identified for funding for the Growth Deal including the Chippenham Station Hub project.

However, the station is not fit for purpose with a number of problems identified:

- Poor quality facilities provide a poor quality arrival experience
- Insufficient space for the retail provision
- Inadequate station security fails to control fare evasion and creates a generally less pleasant station environment;
- Lack of step free access from the north side of the railway. This restricts access to the station and causes major severance for mobility impaired users.
- The rail lines that bisect the town and the significant traffic congestion that occurs at the major crossings present a real barrier to movement across the town;
- Lack of car parking provision at the station, resulting in congestion and overspill onto local streets. This is anticipated to exacerbated by future growth in patronage;
- The area around the railway station is currently significantly under-utilised – the area is dominated by surface car parks and vacant or under-used buildings;
- Rail demand growth is expected following the electrification and upgrade of the Great Western Main Line. The facilities, access and parking at the station are already under strain; and
- The planned housing growth in Chippenham of 4,500 homes by 2026 as detailed by Wiltshire's Core Strategy, January 2015) will further boost rail demand in the town, putting more strain on the station and services.

As growth and development takes place in Chippenham, coupled with the electrification of the mainline to London from Chippenham, usage of the Railway Station is forecast to increase

significantly. Lack of investment in delivering improvements to the Railway Station area at Chippenham therefore has the potential to constrain this growth and the resulting mode shift and decongestion.

2.2 Strategic and Transport Objectives

In order to solve the problems outlined above, five SMART objectives for the Phase 1 improvements to Chippenham station have been identified. These seek to address the first four problems with the remainder to be addressed through the full Chippenham Station Hub scheme. Strong progress against all five objectives is expected by 2019/20, one year after scheme opening:

1. Improve station security through restricted access and greater staff presence;
2. Improve revenue capture and reduce rate of ticketless travel through the regulation of access to ticket holders;
3. Reduce severance across the railway through provision of step free access on the north side;
4. Provide improved accessibility at the railway station by delivering an enhanced ticket hall and improved café/retail facilities;
5. Improve accessibility to/from the station with cycling improvements and a cycle hire facility.
6. Increase customer satisfaction with an enhanced ticket hall, improved café/retail facilities and enhanced station security

2.3 Appraisal Specification

The appraisal information previously available for the scheme has been reviewed and an Appraisal Specification Summary Table, Table 1, prepared describing the proposed methodology taking account of the scale and severity of impacts identified, the level of uncertainty about estimated impacts and the focus of the local objectives. This specification is described in more detail in the Appraisal Specification Report.

The appraisal process is focused on 'larger' impacts (both beneficial and adverse), those where there is uncertainty about the scale of the benefit, and those which could make a difference to the overall Benefit Cost Ratio (BCR) or Value for Money (VfM) categorisation.

This process has identified transport modelling, in particular rail passenger forecasting, and economic assessment as the key elements in the VfM categorisation and the methodology for these is described in detail in Sections 3 and 4. Scoping and specification of environmental, social and distributional impacts are discussed later in the report.

Table 1 Appraisal Specification Summary Table

Type of impact		Initial Assessment	Proposed Methodology		DI
Economy	Business users & transport providers	Large Beneficial	TAG A5-3 TAG A5-4	Rail forecasting of demand and revenue with PDFH and MEC approach	
	Reliability impact on Business users	Negligible	TAG A5-3	Screened out	
	Regeneration	Negligible	TAG A2-2	Screened out	
	Wider Impacts	Negligible	TAG A2-1	Screened out	
Environmental	Noise	Negligible	TAG A3	Screened out	
	Air Quality	Slight Beneficial	TAG A3 TAG A5-4	MEC approach to monetary assessment	
	Greenhouse gases	Slight Beneficial	TAG A3 TAG A5-4	MEC approach to monetary assessment	
	Landscape	Neutral	TAG A3	Screened out	
	Townscape	Slight Beneficial	TAG A3	Qualitative	
	Heritage of Historic resources	Slight Adverse	TAG A3	Qualitative	
	Biodiversity	Negligible	TAG A3	Screened out	
	Water Environment	Negligible	TAG A3	Screened out	
Social	Commuting and Other users	Moderate Beneficial	TAG A5-3 TAG A5-4	Qualitative	
	Reliability impact on Commuting and Other users	Negligible	TAG A5-3	Screened out	
	Physical activity	Negligible	TAG A4-1	Screened out	
	Journey quality	Slight Beneficial	TAG A4-1	Qualitative	
	Accidents	Slight Beneficial	TAG A4-1 TAG A5-4	MEC approach to non-user impact and user impact screened out	
	Security	Moderate Beneficial	TAG A4-1	Qualitative	
	Access to services	Slight Beneficial	TAG A4-1	Screened out	
	Affordability	Neutral	TAG A4-1	Screened out	
	Severance	Moderate Beneficial	TAG A4-1	Qualitative	
	Option values	Neutral	TAG A4-1	Screened out	
Public Accounts	Cost to Broad Transport Budget	Moderate Adverse	TAG A1-2	Standard treatment of costs with rail assumptions applied	
	Indirect Tax Revenues	Moderate Adverse	TAG A5-4	MEC approach to monetary assessment	

3 Rail Passenger Forecasting

3.1 Scale of Impact

The scheme is expected to increase rail demand at the station with the distribution of additional rail travel following the current pattern at the station. This means that the majority of additional rail travel, and reduction of car travel, will be on the London – Bristol axis with 86% of additional travel being to/from stations directly on this axis. However, despite the wide geographic area, given the relatively modest nature of the interventions it is expected the total demand impact will remain moderate, albeit the relatively high station yields are likely to make the revenue impact large.

For wider social and environmental impacts the scale of impact is expected to be slight to moderate. With the exception of accident, air quality and greenhouse gas emissions, which are expected to have a slight, albeit mostly very small, impact throughout the London – Bristol axis, other social and environmental impacts are expected to be limited to the immediate station surrounds. The red line on figure 1 sets out the study area for these impacts.

Figure 1 Area of direct social and environmental impact (albeit the wider surrounding area will be impacted by travel through the site)

3.2 Overview of method

The forecasting methodology follows a three step approach to establish the: Base/Do Minimum level of future demand; demand impact of planned interventions and; highway impact of planned interventions. Standard rail industry forecasting methods are applied to detailed

information on station usage and revenue at Chippenham station from the Lennon database. This is based on an analysis of ticket sales at the station and is a standard rail industry tool for understanding demand and revenue. GWR also has existing survey information on passenger views on the facilities which is available both to help add validity to assumptions and provide a monitoring tool. Other key data and information is available from WebTAG, Passenger Demand Forecasting Handbook and the Western Route Study.

A range of constraints apply on the appraisal. These include:

- The approach to apply standard rail industry practise using known data sources. No separate highway modelling to be undertaken.
- No additional service changes are to be considered with the scheme (which would lead to major revenue growth not attributable to the scheme) in the Do Something case above those committed assumptions in the Do Minimum case.
- No additional fares changes are to be considered in the Do Something case above the standard DfT assumptions applied in the Do Minimum case.
- All car kms to be assumed to be removed from South West and South East. No consideration of reduction in London or elsewhere as it is not possible to accurately estimate these smaller numbers
- The environmental and social impact mostly limited to the immediate surrounds of the station except for impacts assessed through the Marginal External Cost approach.

3.3 Baseline demand

Reviewing recent Lennon data demonstrates that station footfall was 1.815m in 2015/16 a slight decrease on the previous year, due to the six-week closure of Box tunnel in summer 2015, but a 0.5m increase on 2005/06. In the last year demand has increased again and was 1.899m in the last 12 months.

A more detailed review of the top flows indicates that the top 20 flows to/from Chippenham account for 93% of this demand. These top 20 are shown in table 2 below. The average equivalent highway travel distance of these top 20 flows is 39.4 miles.

Table 2 Demand flows to/from Chippenham

From/To	Demand Flow	Equivalent Highway Distance (miles)
Bath Spa	635589	14
London BR	390600	98
Bristol Temple M	292890	27
Swindon Wilts	226792	20
Didcot Parkway	64556	55
Reading	23498	58

Trowbridge	21767	14
Filton Abbey Wood	16327	24
Oxford	13667	53
Cardiff BR	11316	61
Bristol Parkway	9837	25
Melksham	8524	8
Weston-super-Mare	8305	50
Westbury	8013	17
Birmingham BR	5425	105
Keynsham	5229	21
Salisbury	4460	36
Cheltenham Spa	4071	38
Gatwick Airport	4017	120
Southampton Cent	3942	84

3.4 Do Minimum demand forecasts

A Do Minimum forecast of future year demand has been developed encompassing underlying demand growth and the impact of committed schemes (including IET introduction and service enhancements).

The underlying rate of demand growth has been taken from the Western Route study, at 3.4% per annum to 2023 and 2.3% per annum thereafter, which is broadly in line with 38% growth in the ten years to 2015/16. The impact of committed interventions, estimated from PDFH and MOIRA, has been overlaid on top as a one off uplift for 2019.

This is considered to be appropriate as, although the Western Route study theoretically assumed the impact of electrification, in practise GWRs train plan includes further improvements, including additional peak services and faster journey times, and an overlay is necessary to reflect this. A 2.4% uplift for the new trains impact has been derived from PDFH and a 1.6% uplift for the timetable impact has been taken from a MOIRA run for the March 2019 timetable, giving a one off uplift of 4% for 2019.

All demand growth has been capped 20 years from the current year in accordance with current WebTAG guidance (Unit A5.3 Para 2.3.1). The resulting forecast demand growth is shown in figure 2. Overall demand growth is estimated at 39% in ten years and 75% by the time demand is capped in 20 years.

Figure 2 Do Minimum demand growth at Chippenham station

3.5 Do Something demand forecasts

Do Something forecasts of future year demand have been developed encompassing the impact of the planned interventions delivered by the scheme.

The GWR Revenue forecasting team has derived a PDFH based method to estimate the demand impact of the different types of interventions including station and access improvements. This method is set out in greater detail in the Appraisal Specification report. However, full details of the parameters used are shown in table 3.

Table 3 Parameters applied to estimate demand uplifts from interventions at Chippenham station

Intervention		Assumptions				Total demand uplift
Station improvements		PDFH V5.1	Business / leisure	Commuting	Percentage applied	Demand uplift
Booking hall benefits	Ticket office facility	C8.4	WTP – 8.6p *(2016/17 price)* Fare elasticity: -0.6	-1	10%	0.07%
	Security	C8.15	10.10%	6.00%	10%	0.89%
	Staff presence	C8.14	9.20%	5.5%	10%	0.81%
Café		C8.1	WTP – 74p *(2016/17 price)* Fare elasticity: -0.6	-0.6	10%	0.61%
Access improvements		Source	Uplift	Affected journeys		Demand uplift
Forecourt	Cycle parking	Assumed	2%	10%		0.2%
Lift	Lift	Assumed	2%	5% mobility impaired customers and 50% of these affected		0.05%

The total impact of interventions together, estimated at 2.64% using the above approach has been applied as a one off uplift spread over 2018 and 2019 reflecting the planned delivery of the improvements. The overall demand impact at Chippenham station is shown in figure 3.

Around 50,000 additional journeys are estimated initially growing alongside demand to around 90,000 by the time demand is capped. Some of these additional journeys will not be new journeys, either being abstracted from other stations or lengthening of existing trips, and so the actual incremental demand will be correspondingly lower.

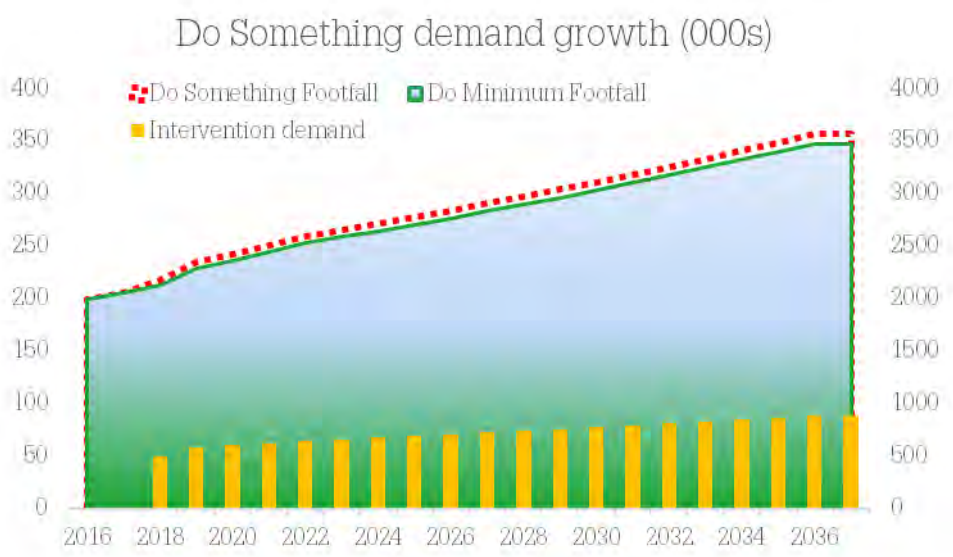


Figure 3 Do Something demand growth at Chippenham station resulting from the proposed interventions

3.6 Highway impact

The reduction in highway travel as a result of new rail passengers diverting from private car travel has been estimated using the marginal external costs approach. Reflecting the observations in the previous section, about the actual level of incremental demand, not all rail trips will shift from car and a standard diversion factor of 26% (TAG Unit A5.4) has thus been used to estimate the number of car journeys removed from the highway network.

Overall a reduction of around 15,000 vehicle trips per annum, eventually increasing to around 23,000 vehicle trips per annum, are estimated and the build-up of this is shown in figure 4.

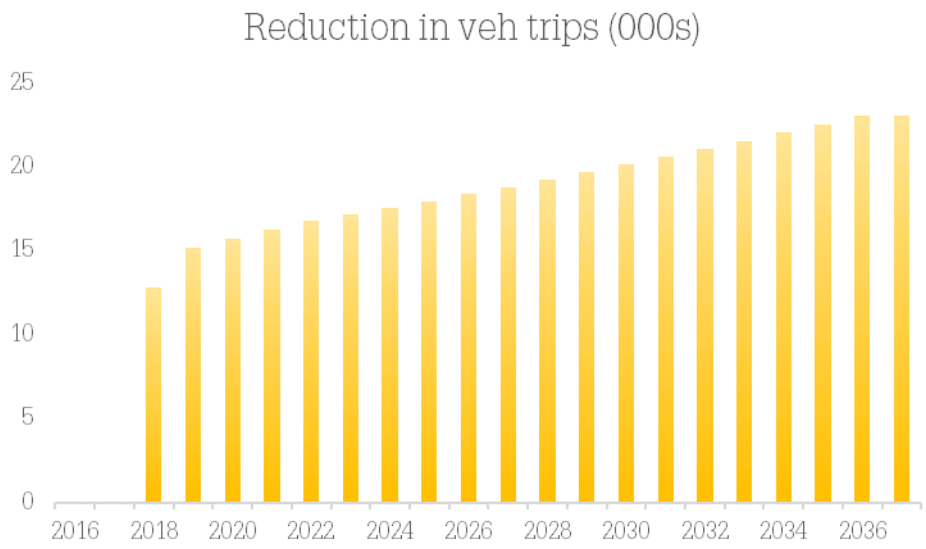


Figure 4 Reduction in private vehicle trips per annum resulting from interventions at Chippenham station

The average travel distance from/to Chippenham station, expressed in equivalent highway terms, is currently 39.4 miles or 63 kms. Applied to the reduction in car journeys this gives an estimate of the change in car kms resulting from the scheme of around 0.8m vehicle kms in 2018, increasing to around 1.5m car kms by the time demand is capped, removed from the highway network.

This scale of change reflects the relatively high average travel distance from Chippenham station, with much of the vehicle kms taking place east of Swindon. An analysis of the top 20 demand flows identified 49.998% of the change in vehicle kms would be in the South West and 50.002% in the South East. The resulting distribution of congestion relief is shown in figure 5. The greatest concentration of journeys being between Bath and Chippenham but the greatest concentration of vehicle kms removed between Swindon and Reading reflecting the larger distances to the east.

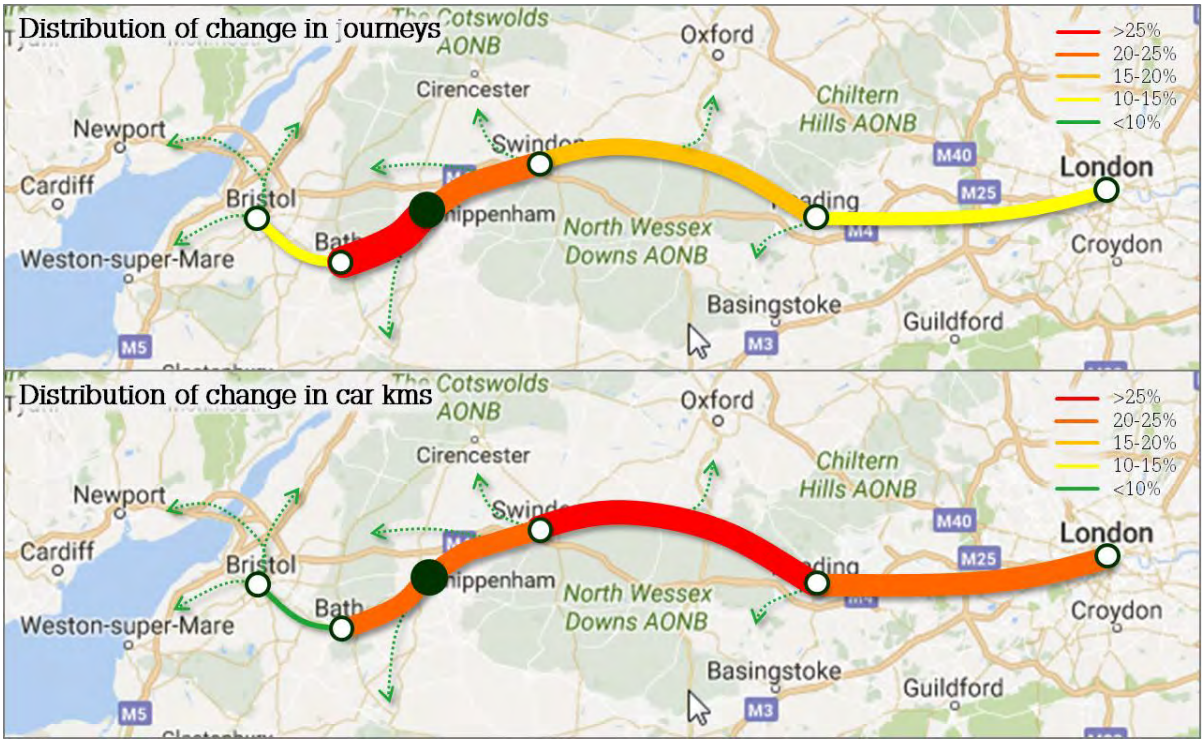


Figure 5 Core distribution of highway congestion relief

3.7 Sensitivity scenarios

Several additional sensitivity scenarios have been modelled to reflect potential uncertainties with assumptions made in the central case. Two of these relate to either higher or lower demand. The third relates to an increase in the cost base.

Table 4 Sensitivity scenarios

Sensitivity	Modelling approach
1. Lower underlying demand growth – underlying rate reduced by 50%	The underlying growth rate has been reduced by 50%. This represents a slowing of overall rail demand for macro-economic factors, such as a decrease in GDP growth or fuel prices, or a relative increase in the attractiveness of competitors
2. Higher population growth impact – applied on top of underlying rate	The % additional population increase attributable to new houses up to 2026 has been applied as an uplift to origin journeys from within the town. This represents the additional demand from population growth arising on top of underlying growth not as part of it.
3. Higher costs – 50% increase in capex and opex costs	Explained in the next section

4 Economic Assessment

4.1 General Approach

The general approach to economic appraisal follows WebTAG guidance including TAG Unit A5.3 guidance on rail appraisal and Tag Unit A1.1 cost benefit analysis.

4.2 Parameters of the economic assessment

The basic parameters of the assessment follow standard practise with appraisal over a 60 year appraisal period and a base year for pricing in real terms of 2010. Discounting is undertaken at the rate of 3.5% for 30 years from the current year and 3% thereafter and all costs and benefits will be presented in market prices. Assumptions on inflation measures, including RPI growth and the GDP deflator, and earnings growth are taken from the TAG Databook March 2017 release.

The following key principles apply in the appraisal:

- 60-year economic appraisal period, for consistency with other transport scheme assessments across the UK;
- Base year for pricing in real terms of 2010 with prices calculated in nominal terms with RPI growth and converted to real terms using the GDP deflator.
- All costs and benefits presented in market prices, and where necessary converted from factor costs, as recommended by WebTAG.
- Discount rates of 3.5% for the first 30 years from the current year and 3% thereafter are assumed.
- Demand, revenue and some costs are capped 20 years from the current year for consistency with other transport scheme assessments. Staff costs are excluded from this and continue to grow with earnings growth.

4.3 Estimation of scheme benefits

Revenue

The approach to estimating additional revenue follows the standard industry method of applying average yield at the station to incremental demand. Only new to rail demand is considered and this is derived by applying the diversion factor from other modes of 54% given in TAG Unit A5.4 (which includes the 26% from private car). The current average yield across all journeys is £10.75 with an average of £12.64 for business/leisure and £6.05 for commuting reflecting the influence of Swindon, Bath and Bristol on commuting as well as London. It is assumed that the intervention will not change this either through a change in the market segments or average trip length.

Additional revenue incurred through the reduction in ticketless travel is estimated using a ticketless travel rate based on revenue blocks at equivalent stations and adjustments for local factors at Chippenham including proportion of revenue through ungated stations and the presence of peak time ticket examiners.

Revenue growth has been capped after 20 years from current year in line with the cap on demand growth and current guidance (WebTAG Unit A5.3 Para 2.3.1). Fares growth is thus also capped at this point. Prior to this point RPI+1 is assumed except between 2013 and 2021 as it current policy to restrict fare increases to RPI until 2020 at the earliest. Nominal fare increases are converted to real terms using the GDP deflator.

A summary of the revenue estimates are shown in table 5. This is presented in real and discounted terms for clarity and summed over the 60 year period. It will be clear that revenue is the key benefit from the scheme totalling £10m in discounted terms over the appraisal period. This is a very significant benefit to the public accounts as almost all of the net revenue will be returned to central government finances through future franchises.

Table 5 Incremental revenue estimated

Revenue estimates (£ms)	2018	2019	2020	2030	60-year period
Undiscounted real terms	0.26	0.31	0.33	0.50	32.92
Discounted real terms	0.20	0.23	0.23	0.25	9.95

To demonstrate the build-up of revenue over time figure 6 presents the nominal profile of incremental revenue and reduction in ticketless travel up to the point at which revenue is capped. In nominal terms this builds very significantly as a result of fares changes. In real terms as set out in the table above the build-up is rather less but it is still significant due to the strong underlying demand growth.

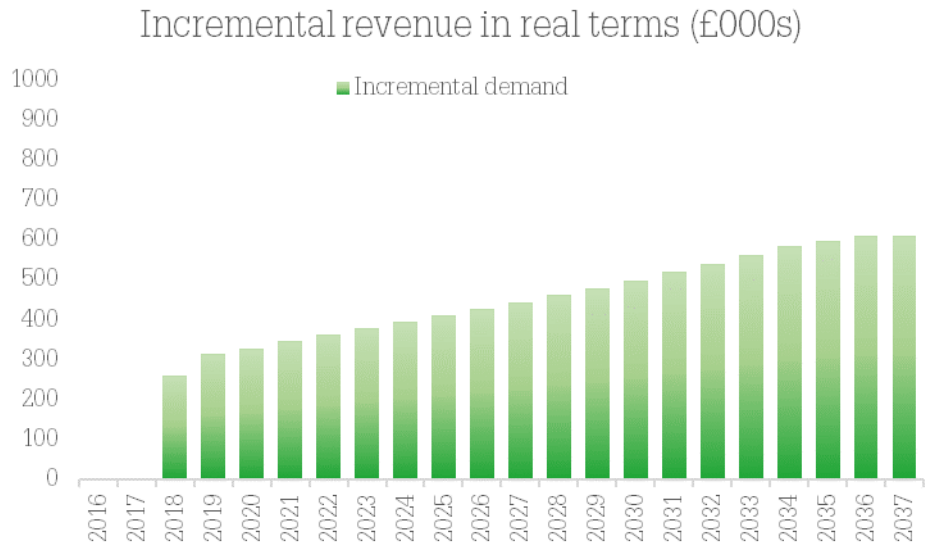


Figure 6 Incremental revenue build up in real terms

Marginal External Costs

Estimates of scheme benefits accruing from the modal shift from car to rail have been compiled using the Marginal External Cost approach following the guidance in TAG Units A5.3 and A5.4. Values of external costs have been taken from TAG Databook A5.4.2 and A5.4.4. A weighted value for congestion has been taken from the proportion of car kms removed in the South East and South West as set out in section 3.5 above. Estimates of these benefits have been produced for each year monetary values are available and then interpolated between. The MEC values taken are shown in table 6.

Table 6 MEC Value used for the valuation of non-user benefits

MEC Values (2010 prices)						
MEC Values (pvkm)	2015	2020	2025	2030	2035	Weighting
Congestion (South East)	6.4	8.4	11	14.1	18.6	50.002%
Congestion (South West)	4.1	5.2	6.5	7.7	9.7	49.998%
Weight Congestion	5.3	6.8	8.8	10.9	14.2	
Accidents	1.7	1.9	2	2.2	2.5	
Local Air Quality	0.1	0	0	0	0	
Greenhouse gases	0.8	0.7	0.7	0.7	1	
Indirect taxation	-4.1	-3.6	-3.1	-2.9	-2.9	

The estimates of marginal external costs are shown in figure 7 up to the point at which demand is capped. As will be seen the principle benefit arises from congestion relief although this is offset by indirect tax impacts to some extent. Either way the level of non-user benefits calculated are significantly less than the estimated revenue levels set out in the preceding section.

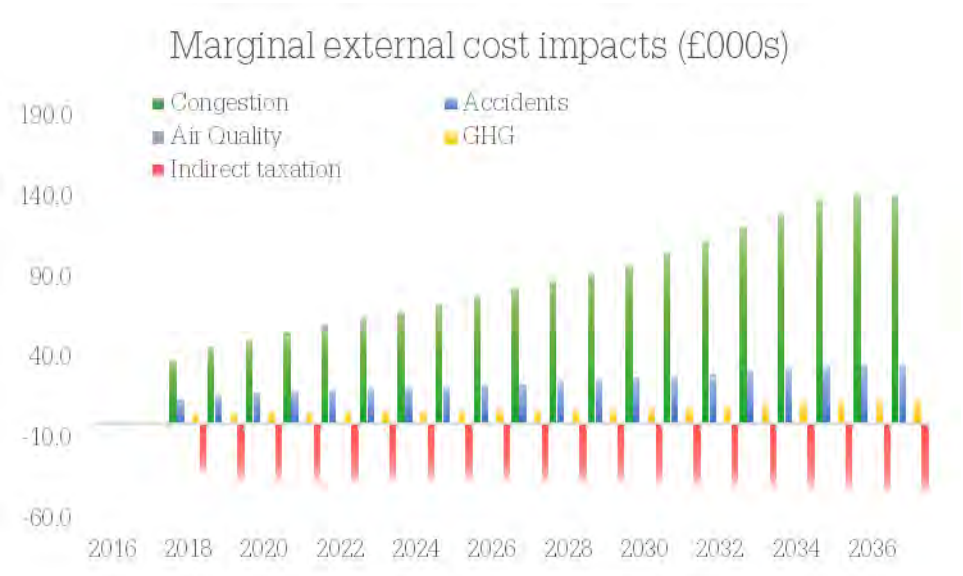


Figure 7 Marginal external cost impacts

4.4 Estimation of scheme costs

Scheme costs have been estimated and treated in accordance with WebTAG Unit A1.2. This includes the application of appropriate risk and optimism bias factors as recommended for rail schemes in WebTAG Unit A5.3 and the conversion of all costs from factor to market prices.

Capital costs

The initial capital costs have been estimated from the GRIP4 estimates available for the Part A scheme and a pre-GRIP estimate prepared by GWR for the Part B scheme. This is because the Phase 1 scheme has been conceived as an opportunity to deliver additional outputs as part of the GWR works that form the backbone of Part A, and some elements are therefore only at an early stage of development.

Appropriate levels of optimism bias have been applied to each part with 18% (GRIP 4 level for station works) applied to Part A and 50% to Part B. These are based on Table 3 of TAG Unit A5.3.

In nominal terms factor costs for the scheme (exc committed investment in the Do Minimum case) are estimated at £0.95m for Part A and £1.70m for Part B. Adjusted to market prices and expressed in real terms these prices are £0.96m and £1.85m.

Staff costs

Additional staff costs over and above the Do Minimum case will not accrue as a result of the scheme.

Maintenance and renewals

Maintenance costs have been estimated from the additional maintenance costs accruing for the new assets, principally the lift. These costs are estimated from GWR experience elsewhere. It is assumed that other maintenance costs will remain largely the same as today and have not been estimated. For the lift an optimism bias of 41% is applied to the discounted maintenance cost reflecting the earlier stage of development on the Part B works.

In real terms maintenance costs are estimated at £22k rising only to £25k when capped at the same time as demand.

Renewals costs have been estimated for the new assets from a combination of the relevant asset components of the scheme estimate and GWR experience elsewhere. It has been assumed that asset life is 15 years with three renewals falling during the appraisal period. An optimism bias of 50% is applied to the renewals costs. The cost of renewals are capped at the same time as maintenance costs and thus in real terms the renewals are estimated at £655k for each renewal.

4.5 Economic appraisal

The economic assessment of the scheme has used the costs and benefits set out previously to undertake a conventional transport economic appraisal on the value for money of the scheme.

The majority of benefits have been shown to accrue from additional passenger revenue resulting from the incremental demand attracted by the scheme and the decongestion impact on the highway network.

These provide a Net Present Value (NPV) for the scheme of £8.7m and a Benefit Cost Ratio (BCR) of 4.11 using a conventional methodology. Applying the DfT guidance on revenue transfer from TOCs to DfT provides an NPV of £8.7m still but a BCR of -0.33, meaning that the scheme generates more income to central government than it costs. This makes the scheme actually financially positive, but can be confusing for decision makers. As such table 7 summarises the economic assessment using both methods for clarity. Appendix 2 and 3 contain the TEE/Public Accounts/AMCB tables, with Appendix 2 following the correct DfT revenue transfer appraisal and Appendix 3 demonstrating a conventional assessment methodology.

Table 7 Summary of economic assessment

Economic assessment (£m, 2010 prices)	DfT rev transfer	Conventional
Net benefits to consumers and private sector (plus tax impacts)		
Decongestion	2.1	2.1
Accidents	0.6	0.6
Air Quality	0.0	0.0
Greenhouse gases	0.2	0.2
TOC net revenue benefits	0.0	9.3
Indirect taxation	-0.8	-0.8
Present Value of Benefits (PVB)	**2.1**	**11.4**
Net costs to government (broad transport budget)		
Initial capital costs	2.2	2.2
Renewals	0.6	0.6
TOC revenue transfer	-9.3	0.0
Present Value of Costs (PVC)	**-6.5**	**2.8**
Net Present Value (NPV)	**8.7**	**8.7**
Benefit Cost Ratio (BCR)	**-0.33**	**4.11**

Regardless of method the results in table 7 demonstrate good value for money. The DfT classification of value for money is set out in table 8. Any BCR of higher than 4 is considered to represent very high value for money and with a BCR of 4.11 we can be confident of this classification.

The financially positive status means the scheme will be financially generative for central government as well and thus the central case is extremely strong.

Table 8 DfT Value for Money classification

Benefit Cost Ratio (BCR) result	Value for Money classification
>4.0	Very high value
2.0- 4.0	High value
1.5- 2.0	Medium value
1.0-1.5	Low value
< 1.0	Poor value

4.6 Sensitivity tests

Although the central case represents very high value for money it is necessary to consider potential uncertainties that could change the value for money classification. Three sensitivity scenarios have therefore been modelled. Two of these relate to either higher or lower demand, defined earlier in the report, and the third relates to an increase in the cost base by 50%.

Table 8 sets out the results of this assessment. This shows that the value for money classification could be affected by variation in the levels of underlying demand or a significant increase in the cost base, taken as 50% for the assessment, which would reduce the classification to high value for money. This would still be robust, however, and the overall scheme value for money, particularly considering qualitative impacts, is therefore not considered particularly sensitive to these factors. On that basis it is considered that the category is robust and carries a high degree of confidence.

Table 9 Summary of economic assessment on sensitivity scenarios

Sensitivity scenarios	BCR
1. Lower underlying demand growth – underlying rate reduced by 50%	3.29
2. Higher population growth impact – applied on top of underlying rate	4.36
3. Higher costs – 50% increase in capex and opex costs	2.66

5 Environmental Assessment

5.1 General Approach

The general approach to environmental assessment follows the guidance provided by TAG Unit A3 Environmental Impact Appraisal. This sets out guidance for the scoping and quantitative assessment of noise, air quality and greenhouse gases and for all other categories of environmental impacts the guidance recommends an Environmental Capital Approach.

5.2 Noise

The scheme will have a negligible impact on noise in the surrounding area. The scheme does not include any key additional generators of noise in comparison to existing generators of noise such as train movements and traffic. The additional lift and small number of additional vehicle trips to the station will both have only an extremely modest impact. Each of these are insignificant compared to the existing situation and the overall impact is therefore considered to be negligible. The scheme is therefore considered to have a neutral impact on noise in the surrounding area. An assessment of noise was therefore screened out of any further assessment.

5.3 Air Quality

An assessment of air quality impacts from the scheme was undertaken within the economic section using the marginal external costs method. This identified very slight air quality benefits arising from the mode shift from car to rail. However, these are so small as to be negligible. No assessment of local air quality within Chippenham has been undertaken as there is no Air Quality Management Area and the net impact of additional vehicle trips to the station set against the change in vehicle travel in the town resulting from the shift to rail is likely to be so small as to be negligible. An overall **slight beneficial** impact is therefore identified.

5.4 Greenhouse gases

An assessment of greenhouse gas impacts from the scheme was undertaken within the economic section using the marginal external costs method. This identified very slight benefits from the reduction in car travel with monetised benefits of around £10k per annum initially totalling around £300k over the appraisal period. A **slight beneficial** impact is therefore identified.

5.5 Landscape

The study area for the scheme in relation to landscape is defined by the area within the visual setting of the station buildings. This is the same as for townscape and can be seen in figure 8. However, within this area there is no significant landscaping, with only a limited number of trees screening the council car park in the South East corner. Moreover, despite the ground dropping steeply away to the south down Monkton Hill, the area around the station itself is flat

and is largely screened from the wider area by surrounding buildings. There is therefore considered to be only negligible impact on landscape from the scheme with an overall **neutral** impact identified. Further assessment of landscape impact was therefore screened out and the scheme has not proceeded to **Step 2 – 5** of the Environmental Capital Approach for landscape.

5.6 Townscape

The study area for the scheme in relation to townscape is defined by the area within the visual setting of the station buildings. This is shown in figure 8 below.

Figure 8 Townscape Study Area

The whole of this area forms part of the Chippenham Conservation area as demonstrated in figure 9. It also contains a number of listed buildings but largely consists of surface car parks surrounding the historic station buildings and bounded by a number commercial buildings. It was therefore considered worthy of further assessment to consider both the potential beneficial and adverse impacts on the townscape.

A qualitative assessment using the WebTAG Townscape analysis worksheet was therefore undertaken and this can be found in Appendix 4. Although the scheme sits within a conservation area the slight adverse impact on the historic station buildings is considered to be offset by a slight beneficial impact on the general appearance of buildings in the area, which is currently mostly low quality buildings and surface car parks around the historic station itself. The assessment therefore identified an overall **neutral** impact.

5.7 Heritage of Historic resources

The study area for the scheme in relation to historic resources is the same as that for townscape. The whole of this study area sits within the Chippenham Conservation area, which covers the whole of Chippenham town centre and surrounding areas of significance.

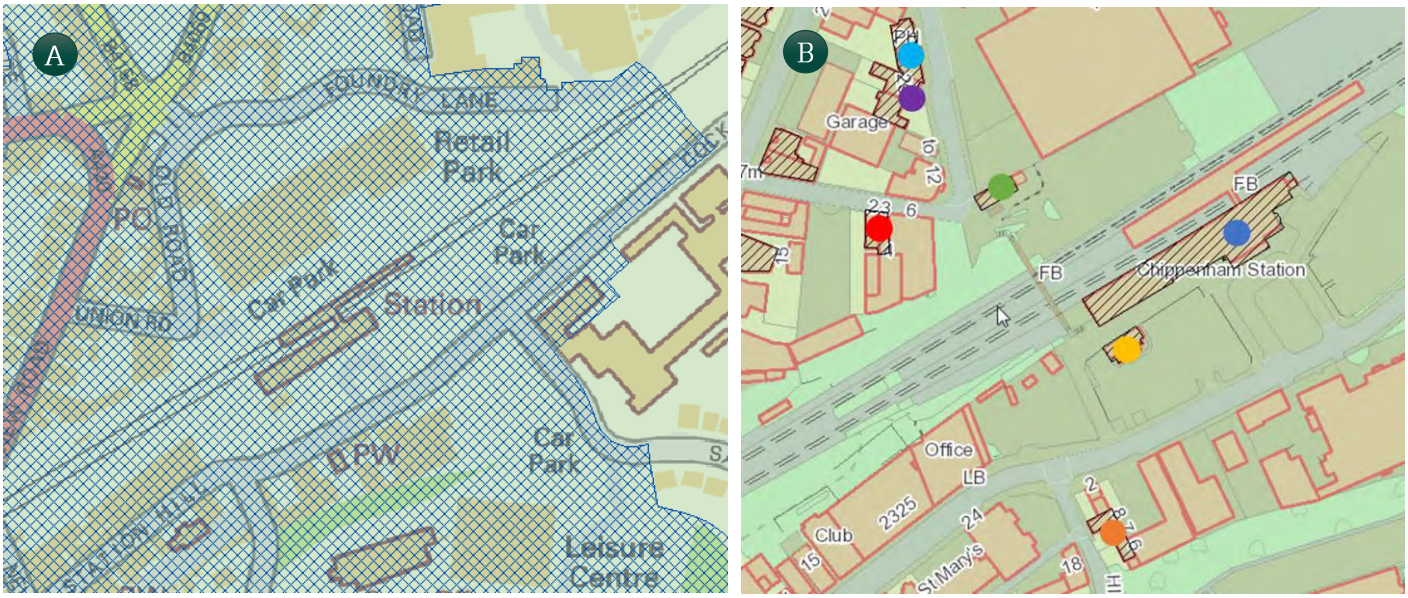


Figure 9: A. Chippenham Conservation area (hatched); B. Listed buildings in the study area

Within the study area lies a range of historic buildings including seven listed buildings and the Great Western Railway main line itself which was constructed by IK Brunel and opened for the first service between London and Bristol in 1841. The listed buildings include a railway office from this time which was reputedly Brunel's drawing office. They also include the station buildings, with the complex of non-listed canopies and steps and bridge spans, and a similar period weighbridge. Outside the station the earliest building in the study area is the late 17th/early 18th century cottages on Monkton Hill. Listed buildings to the north side include several dwellings and the Old Road Tavern from the 19th century. These are set out in table 10.

Table 10 Listed buildings within study area

Listed Buildings	Grade	Description
CHIPPENHAM STATION, ENTRANCE BUILDING AND ATTACHED PLATFORM CANOPIES	2	Station building. 1856-8, for the Great Western Railway. By Rowland Brotherhood, engineer. Limestone ashlar with a plinth and eaves band; shallow-pitched hipped slate roof and moulded stack to the right. 2 blocks, both rectangular plan.
CHIPPENHAM STATION, FORMER BRITISH RAIL OFFICE IN THE CAR PARK	2	Railway office. c1840. By Isambard K Brunel, engineer, for the Great Western Railway. Limestone ashlar, shallow-pitched hipped slate roof with wide eaves, tall moulded stacks to end walls. Rectangular plan.
6 AND 7, MONKTON HILL	2	Two cottages, (formerly 3 cottages). Late C17/early C18. Limestone rubble with freestone quoins and dressings, double-Roman tile roof, stone stack with brick shaft to the left gable end of the right-hand cottage, C20 brick stack to front slope of the gable end to the left-hand cottage. Each cottage is 2-unit plan, the cottage to the left, now part of No.6, is at a right angle to the street. To the right is a C20 lower extension.
MORTIMORES WEIGHBRIDGE OFFICE, CHIPPENHAM STATION YARD	2	Weighbridge office. Mid C19. Limestone rubble ground floor with timber-framed painted weather-boarded 1st floor and returns, slate roof with brick stack. Rectangular plan.
2 AND 3, UNION ROAD	2	Two shops, now one office. Early/mid C19. Limestone ashlar, shallow-pitched slate roof. Double-depth plan.

22 AND 23, NEW ROAD	2	Also known as: Nos.22 AND 23 OLD ROAD. Pair of houses with entrances in Old Road. Mid C19, No.23 to the left, enlarged late C19. Limestone ashlar to the front, rubblestone and render to the rear, shallow-pitched slate roof with a coped gable to the right, late C19 block to the left has a hipped roof to the front, crested and gabled to the rear with an ashlar stack to the left return.
OLD ROAD TAVERN	2	Public house, built in 2 stages. Early and late C19. Limestone ashlar, rusticated to the front, slate roof with ashlar stacks to gable ends and former gable end (now a ridgestack). Double-depth plan.

The listed buildings set out in table 10 may be grouped into two key historical environmental resources worthy of further assessment:

- Listed station buildings *(including station building, railway office and weighbridge office)*
- Surrounding listed buildings *(including residences on Monkton Hill, New Road, Union Road and Old Road Tavern)*

A qualitative assessment using the WebTAG Historic Environment appraisal worksheet was therefore undertaken and this can be found in Appendix 4. This identified an overall slight adverse impact due to the location of the scheme within a conservation area with a number of listed buildings, including a railway office built by IK Brunel, with the impact resulting from the impact on the setting, context and form of the station building itself. However, an overall **slight adverse** score was considered appropriate due to the limited scope and scale of impact and ability to mitigate.

5.8 Biodiversity

The scheme will have negligible impact on biodiversity positive or negative. It will neither remove vegetation or habitat nor increase it and will take place largely within the fabric of existing buildings and wholly within the station demise. There is therefore considered to be a **neutral** impact on biodiversity from the scheme. Further assessment of biodiversity impact was therefore screened out and the scheme has not proceeded to **Step 2 – 5** of the Environmental Capital Approach for biodiversity.

5.9 Water Environment

The scheme will have negligible impact on water environment positive or negative. It will have no impact on drainage with only very minor changes from the collection of rainfall on two additional roofs vice the hard surfacing below but this will neither change the volume or drainage system. No additional surface or foul water will be generated by the scheme and all existing will continue to collect and drain according to its present arrangements. There is therefore considered to be a **neutral** impact on water environment from the scheme. Further assessment of water environment impact was therefore screened out and the scheme has not proceeded to **Step 2 – 5** of the Environmental Capital Approach for water environment.

5.10 Summary of Environmental

A summary of the overall environmental assessment is as follows:

Table 11 Summary of environmental impacts

Environmental	Initial assessment	Assessment
Noise	Neutral	Negligible impact from either construction or operation of lift due to lack of residences in area
Air Quality	Slight Beneficial	Very slight beneficial impact from reduction in car travel but so small as to be almost negligible
Greenhouse Gases	Slight Beneficial	Slight beneficial impact from reduction in car travel with significant car kms reducing carbon
Landscape	Neutral	Negligible impact on landscape as vegetation and view of station are largely unaffected
Townscape	Neutral	Slight beneficial impact of generally good design compared to surrounding buildings offset by slight negative principle of works to conservation area
Historic Environment	Slight Adverse	Slight adverse impact of works to setting and form of historic station building
Biodiversity	Neutral	Negligible change in biodiversity with no vegetation or habitat removed or provided
Water Environment	Neutral	Negligible change in water environment with no significant drainage changes

6 Social Assessment

6.1 General Approach

The general approach to social impact assessment follows the guidance provided by TAG Unit A4.1 Social Impact Appraisal. This sets out guidance for the scoping and assessment of all categories of social impact. The unit sets out methods to undertake a quantitative or qualitative assessment of social impacts. However, some impacts may be scoped out of the assessment and in defining the assessment it is important to apply a proportional approach.

6.2 Physical activity

The scheme will have a negligible impact on physical activity. This is because although the scheme will attract some additional rail patronage this will also involve travel to the station by a number of modes as well as mode shift from a number of modes. The overall impact is therefore negligible as an increase in physical activity in one area is likely to be off set in another. An assessment of physical activity benefits was therefore screened out of any further assessment.

6.3 Journey quality

The scheme will have a significant impact on journey quality as a result of improved station environment. This will include journey quality impacts from the improved booking hall and café, along with greater staff presence, cleaner facilities and generally more pleasant environment. This will benefit existing and new users alike and is considered to have a moderate or large level of impact.

A qualitative assessment using the TAG journey quality worksheet was therefore undertaken and this can be found in Appendix 5. This identified positive impacts on cleanliness, facilities and environment through the provision of new booking hall and cafe facilities and additional staff presence. This will benefit the approx. 6,000 customers a day or around 2 million per annum who use the station plus any non-travelling customers for the cafe or station. The overall impact was therefore considered to be moderate beneficial.

6.4 Accidents

The scheme has the potential for two sources of accident impacts. At the station it could provide a user benefit by reducing accidents. However, given the scope of work this is considered to be negligible. An assessment of the user impact was therefore screened out of further assessment. It will also have a small accident impact to non-users on highways as a result of the reduction in car travel. This is considered to have a slight impact and is worthy of further assessment.

A monetary assessment of the non-user impact was therefore undertaken as set out in the economic assessment section using the marginal external costs of car use methodology (TAG

Unit A5.4). This identified a **slight beneficial** impact with accident savings with a monetary value of around £10k in real terms initially, totalling £800k over the appraisal period.

6.5 Security

The scheme will have a significant impact on security at the station as a result of the restricted access to the station, delineated entrances and increased staffing, albeit most of these impacts arise in the Do Minimum case. This is still considered to represent a moderate level of impact and therefore warranted further assessment.

A qualitative assessment using the WebTAG Security Impacts appraisal worksheet was undertaken and this can be found in Appendix 5. This identified a **moderate beneficial** impact from the general increase in the quality of station facilities. The impact is moderate as the number of pedestrian movements around the station is high, up to 10,000 when allowing for additional movements around the station environs and across the railway, and the beneficial impact of easier access to staff presence is significant.

6.6 Access to services

The scheme will have some impact on access to services by providing better access to the station and the services this can enable travel to. However, the primary impact will result from the provision of a lift on the north side of the railway providing step free access from that side of the railway. This access is largely dealt with through the severance assessment and so will not be assessed under access to services to avoid duplicating benefits. The remaining impact of the scheme on access to service is therefore considered to be negligible. The overall impact being **neutral**. An assessment of access to services was therefore screened out of any further assessment.

6.7 Affordability

The scheme will have a no impact on affordability of public transport other than for fare evaders. The overall impact is therefore **neutral**. An assessment of affordability was therefore screened out of any further assessment.

6.8 Severance

The scheme will have a significant impact on severance across the railway but only for mobility impaired users. Due to the limited number of affected individuals the impact is therefore likely to be moderate. However, this warranted an assessment of the impact on these groups on both sides of the railway for access across and access from the north to the station.

A qualitative assessment using the WebTAG Severance Impacts appraisal worksheet was therefore undertaken and this can be found in Appendix 5. This identified a **moderate beneficial** impact arising from a significant impact on accessibility across the railway, or into the station from the north, for mobility impaired users. Alternative routes across the railway are limited (use of stairs or long slopes) and there is no step free access to the station from the north despite the presence of important services either side. Notably, Wiltshire College, the Olympiad Leisure Centre and Wiltshire Council offices to the south, and Hathaway retail park

and employment opportunities to the north. Severance across the railway has thus been identified as an important issue within the Chippenham Masterplan and providing step free access across will be an important first step prior to providing additional routes across the railway.

6.9 Option values

The scheme will have a negligible impact option values. This is because the scheme will neither fundamentally increase or decrease public transport options for Chippenham. The overall impact is therefore **neutral**. An assessment of option values was therefore screened out of any further assessment.

6.10 Summary of Social Impact

A summary of the Social Impact assessment is as follows:

Table 12 Summary of social impacts

Social	Initial assessment	Assessment
Physical Activity	Neutral	Negligible change in physical activity identified
Journey Quality	Moderate Beneficial	Moderate impact from better cleanliness, facilities and environment through new booking hall, cafe facilities and additional staff presence
Accidents	Slight Beneficial	Slight beneficial from reduction of highway accidents to non-users due to reduction in car kms
Security	Moderate Beneficial	Moderate impact from better staff presence and general upgrade of facilities alongside the pre-planned restricted access and high footfall
Access to Services	Neutral	Negligible impact on access to services with impact of lift assessed within severance assessment
Affordability	Neutral	Negligible change in personal affordability identified
Severance	Moderate Beneficial	Moderate impact on mobility impaired users crossing the railway or accessing the station from the north
Option Values	Neutral	Negligible change in public transport options identified

7 Distributional Impacts

7.1 Distributional impact screening

The social and distributional impacts of Chippenham Station Hub Phase 1 have been assessed according to the WebTAG A4.1 and A4.2 methods. The Step 0 initial screening followed the process for the planning and appraisal of interventions where there are no social and/or distributional objectives within the local objectives of the scheme, so that any SDI impacts would be consequences of the scheme. The initial screening considering the following points:

- Consider if the option being considered might have negative or positive impacts on specific groups of people, including children, older people, disabled people, Black and Minority Ethnic (BME) communities, people without access to a car and people on low incomes;
- Consider whether all of the expected negative impacts can be eliminated through some form of amendment to or redesign of the initial option;
- Where there are positive impacts and where negative impacts cannot be eliminated, consider whether impacts are sufficiently minor and socially and / or spatially dispersed such that a detailed SDI appraisal is disproportionate to the potential impacts;

7.2 Distribution impacts results

The Step 0 initial SDI screening found that there would be no significant or concentrated adverse effects on low income and vulnerable groups for all of the impact categories. The results are included in table 13. It was concluded that further SDI screening (Step 1 to 3), or full SDI analysis (Step 1 to 5) was not necessary or proportionate to the potential impact.

Table 13 Summary of distributional impacts

Distribution impacts	Initial assessment
User benefits	Positive outcome in consumer user benefits. Distribution impacts unlikely to be significant. Assessment to proceed only if requested by SW LEP.
Noise	Overall neutral outcome. Individual impacts minor so no further assessment required.
Air quality	Slight positive outcome. Impacts minor so no further assessment required.
Accidents	Slight positive outcome. Impacts minor so no further assessment required.
Security	Positive outcome on security for rail users. Distributional impacts unlikely to be significant. Assessment to proceed only if requested by SW LEP.
Severance	Positive outcome from new lift. Particularly positive impact on mobility impaired users. Assessment to proceed only if requested by SW LEP.
Accessibility	Positive outcome from new lift. Particularly positive impact on mobility impaired users. Assessment to proceed only if requested by SW LEP.
Affordability	Neutral outcome. No further assessment required.

Appendix 1 Appraisal Assumptions

Appraisal assumptions Assumptions apply to the central case unless otherwise stated. All years refer to financial years.			
Assumption	**Value**	**Source**	**Comment**
General assumptions			
Current year	2017	WebTAG	
Model base year	2016	WebTAG	
First year of benefits	2018	Project Team	100% of benefits assumed from this year
Benefits profile by year:	% of total		
2018	75%	Project Team	100% of station improvement uplift and 50% of reduced ticketless travel
2019	100%	Project Team	100% of access improvements and remaining 50% of reduced ticketless travel now captured
2020	100%	Project Team	Full maturity
Appraisal period (years)	60	Project Team	Standard appraisal period under WebTAG
Price base year	2010	WebTAG (Unit A1.1, Para 2.6.3)	Values converted from model base year to price base year using GDP deflator
Base year for discounting	2010	WebTAG (Unit A1.1, Para 2.7.6)	
Discount rate (Social Time Preference Rate)	3.5% for 30 years from the current year and 3.0% thereafter	WebTAG (data-book-March 2017, Table A1.1.1) & HM Treasury Green Book	
Unit of account	Market prices	WebTAG (Unit A1.1, Para 2.5.2)	19% added to convert factor prices to market prices
Capital and operating cost assumptions			
Changes in capital costs in real terms during appraisal period	Not applied		
Changes in operating costs in real terms during appraisal period	Labour costs assumed to increase in real terms (relative to GDP deflator) during appraisal period. Increases are c. 2% per anum between 2015 and end of appraisal period.	WebTAG (data-book-Mar 2017)	
Cost of TOC profit as percentage of any change in operating costs	Not applied		
Optimism bias for:			
Capital costs	18% at GRIP stage 4 and 50% at GRIP stage 1/2	WebTAG (Unit A5.3, Table 3)	
Operating costs	1% pa for station improvements. 41% of discounted opex for access.	WebTAG (Unit A5.3, Table 3)	
Passenger beneft related assumptions			
Passenger demand growth	3.4% p.a. from 2016 to 2022 (exc 2018), 7,4% p.a. from 2018 to 2018, 2.3% p.a. from 2023 to 2036 and 0% therefater	Based on Western Route Study and GWR assumptions. Under the central scenario, growth is capped 20 years after the current year, in accordance with WebTAG (Unit A5.3, Para 2.3.1)	One off uplift of additional 4% in 2018 derived from MOIRA and PDFH guidance for new trains.
Year in which underlying demand growth is capped (20 years from current year)	2036	WebTAG (A5.3, 3.3.1)	This cap year also applies to fare increase applied (see below) and any real terms cost increases applied (except earnings costs)

Type/area of journey:			
Within the London Travelcard Area			
Rest of South East to/from London			
Within the South East (exc London)			
Outside South East to/from London(<100)			
Outside South East to/from London(100+)			
Outside South East <20 miles (excl within			
Outside South East 20-100 miles			
Outside South East 100+ miles			
To/From Airports			
Proportion of Business (work) journeys	19%		
Proportion of commuting journeys	29%	Derived from MOIRA	
Proportion of other journeys	52%		
Average Yield (£)	10.8	Derived from MOIRA	
Average journey length (miles)	39.4	Derived from MOIRA	
Average fare increase (1% per annum above RPI) up to 2013 and from 2021. No increases applied after demand cap year (see above). Revenue growth also takes account of forecast increases in RPI relative to GDP deflator (until demand cap year), since appraisal uses GDP deflator to deflate prices to price base year	1.0	DfT advice	
between 2014 and 2020	0%	DfT advice	
Reduction in car kms for 100% increase in rail passenger kms (diversion rate), for external costs of car use	26%	WebTAG (Unit A5.4, Table 1)	Same rate applied across GB
MEC congestion benefits:			
Proportion allocated to work time	50%	DfT	
Proportion allocated to commuting	25%	DfT	
Proportion allocated to other	25%	DfT	
Other assumptions			
TOC revenue and TOC operating cost transfer:			
During current franchise the following proportion of revenue and operating costs is assumed to be transferred to governement	100%	GWR assumption	Revenue transfer for gatelines already priced into franchise and other additional revenue accruing before franchise end will be marginal so 100% transfer assumed for simplicity.
of revenue and operating costs is assumed to be transferred to government	100%	GWR assumption	
Network rail operating costs			All NR operating costs are treated as central government costs
Indirect tax costs	rates, resource costs of fuel and average fuel efficiency, and forecast changes in these parameters over the appraisal period	WebTAG (Unit A5.3, 4.7, and data-book-March 2017)	

Appendix 2 Appraisal Tables (DfT Rev Transfer)

1. Transport Economic Efficiency table (1)

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	526		526			
Vehicle operating costs	0					
User charges	0					
During Construction & Maintenance	0					
NET NON-BUSINESS BENEFITS: COMMUTING	526	*(1a)*	526	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	526		526			
Vehicle operating costs	0					
User charges	0					
During Construction & Maintenance	0					
NET NON-BUSINESS BENEFITS: OTHER	526	*(1b)*	526	0	0	0

Business								
User benefits			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
Travel time	1052			1052				
Vehicle operating costs	0							
User charges	0							
During Construction & Maintenance	0							
Subtotal	1052	*(2)*	0	1052	0	0		0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	9952						9952	
Operating costs	-669							-669
Investment costs	0							
Grant/subsidy	-9284						-9284	
Subtotal	0	*(3)*			0	0	669	-669
Other business impacts								
Developer contributions	0	*(4)*	0		0	0		0
NET BUSINESS IMPACT	1052	*(5) = (2) + (3) + (4)*						
TOTAL								
Present Value of Transport Economic Efficiency Benefits (TEE)	2103	*(6) = (1a) + (1b) + (5)*						

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

2. Public Accounts table (1)

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Funding						
Revenue	0					
Operating Costs	0					
Investment Costs	0					
Developer and Other Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	0	*(7)*	0	0	0	0
Central Government Funding: Transport						
Revenue	0					
Operating costs	0					
Investment Costs	2778					2778
Developer and Other Contributions	0					
Grant/Subsidy Payments	-9284				-9284	
NET IMPACT	-6505	*(8)*	0	0	-9284	2778
Central Government Funding: Non-Transport						
Indirect Tax Revenues	760	*(9)*			760	
TOTALS						
Broad Transport Budget	-6505	*(10) = (7) + (8)*				
Wider Public Finances	760	*(11) = (9)*				

negative numbers.

All entries are discounted present values in 2010 prices and values.

3. Analysis of Monetised Costs and Benefits table (1)

Analysis of Monetised Costs and Benefits

Noise	0	*(12)*
Local Air Quality	0	*(13)*
Greenhouse Gases	221	*(14)*
Journey Quality		*(15)*
Physical Activity		*(16)*
Accidents	579	*(17)*
Economic Efficiency: Consumer Users (Commuting)	526	*(1a)*
Economic Efficiency: Consumer Users (Other)	526	*(1b)*
Economic Efficiency: Business Users and Providers	1052	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-760	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	2145	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	-6505	*(10)*
Present Value of Costs (see notes) (PVC)	-6505	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	8650	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	-0.33	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Appendix 3 Appraisal Tables (Conventional)

1. Transport Economic Efficiency table (2)

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	526		526			
Vehicle operating costs	0					
User charges	0					
During Construction & Maintenance	0					
NET NON-BUSINESS BENEFITS: COMMUTING	526	*(1a)*	526	0	0	0

Non-business: Other	**ALL MODES**		**ROAD**	**BUS and COACH**	**RAIL**	**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**	**Passengers**	**Passengers**	
Travel time	526		526			
Vehicle operating costs	0					
User charges	0					
During Construction & Maintenance	0					
NET NON-BUSINESS BENEFITS: OTHER	526	*(1b)*	526	0	0	0

Business								
User benefits			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
Travel time	1052			1052				
Vehicle operating costs	0							
User charges	0							
During Construction & Maintenance	0							
Subtotal	1052	*(2)*	0	1052	0	0		0
Private sector provider impacts						**Freight**	**Passengers**	
Revenue	9952						9952	
Operating costs	-669							-669
Investment costs	0							
Grant/subsidy	0							
Subtotal	9284	*(3)*			0	0	9952	-669
Other business impacts								
Developer contributions	0	*(4)*	0		0	0		0
NET BUSINESS IMPACT	10335	*(5) = (2) + (3) + (4)*						
TOTAL								
Present Value of Transport Economic Efficiency Benefits (TEE)	11387	*(6) = (1a) + (1b) + (5)*						

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

2. Public Accounts table (2)

Public Accounts (PA) Table

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Funding						
Revenue	0					
Operating Costs	0					
Investment Costs	0					
Developer and Other Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	0	*(7)*	0	0	0	0
Central Government Funding: Transport						
Revenue	0					
Operating costs	0					
Investment Costs	2778					2778
Developer and Other Contributions	0					
Grant/Subsidy Payments	0					
NET IMPACT	2778	*(8)*	0	0	0	2778
Central Government Funding: Non-Transport						
Indirect Tax Revenues	760	*(9)*			760	
TOTALS						
Broad Transport Budget	2778	*(10) = (7) + (8)*				
Wider Public Finances	760	*(11) = (9)*				

numbers.

All entries are discounted present values in 2010 prices and values.

3. Analysis of Monetised Costs and Benefits table (2)

Analysis of Monetised Costs and Benefits

Noise	0	*(12)*
Local Air Quality	0	*(13)*
Greenhouse Gases	221	*(14)*
Journey Quality		*(15)*
Physical Activity		*(16)*
Accidents	579	*(17)*
Economic Efficiency: Consumer Users (Commuting)	526	*(1a)*
Economic Efficiency: Consumer Users (Other)	526	*(1b)*
Economic Efficiency: Business Users and Providers	10335	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-760	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	11428	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	2778	*(10)*
Present Value of Costs (see notes) (PVC)	2778	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	8650	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	4.11	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Appendix 4 Environmental Impacts worksheets

1. Townscape Impacts Appraisal Worksheet

TAG Townscape Impacts Worksheet

	Step 2	Step 3					Step 4
Features	**Description**	**Scale it matters**	**Rarity**	**Importance**	**Substitutability**	**Changes in Without-scheme case**	**Impact**
Layout	Railway bisects site with surface car parks and the rear of c20th commercial buildings on north side and surface car parks and highway surrounding historic station buildings on south side	Local	Common	Low importance at a local/regional level	Car parks and surrounding buildings could be replaced but not station building footprint	No major layout changes anticipated (other than Chippenham Station Hub project)	Scheme will not impact layout - neutral impact
Density and mix	Very low density with car parking on all sides bounded by a mix of retail, offices, leisure and education facilities.	Local	Common	Low importance at a local level	Replaceable	Potential minor changes with redevelopment of former Wiltshire College	Scheme will not impact density or mix of uses - neutral impact
Scale	Mainly 2/3 storey buildings set back behind car parks suround single story historic station buildings	Local	Common	Low importance at a local level	Replaceable	Potential minor changes with redevelopment of former Wiltshire College site	Scheme will have minor impact on scale of buildings on the north side but new facilities will largely be in keeping with current scale - neutral impact
Appearance	Mainly unattractive low quality buildings including rear of warehouse type to north. These surround historic station buildings of stone construction which are representative of the wider local vernacular.	Local	Common	Low importance at a local level except station building which are of high importance at a local level	Replaceable except listed buildings	Potential minor changes with redevelopment of former Wiltshire College site	Scheme will have minor impact appearance of buildings but new facilities will be designed to complement historic buildings as required by conservation officer - slight beneficial
Human interaction	Railway causes major severance for mobility impaired users.	Local	Common	High importance at a Local level	Severance could be resolved	No changes planned	Scheme will resolve severance for mobility impaired users - slight beneficial
Cultural	Site sits within a conservation area and a number of buildings are listed including office built by IK Brunel which is of local significance.	Local	High	High importance at a Local/Regional/National level	Listed buildings irreplaceable	No changed planned	Scheme will undertake works that will effect the setting of listed buildings - slight adverse
Land use	Mostly car parks with some commercial and retail.	Local	Common	Medium importance particularly car parking and interchange for station at local/regional level	Replaceable in new locations with exception of railway and station itself	No changes planned except redevelopment of former Wiltshire College site	No impact on land use - neutral impact
Summary of character	Mostly undistinguished c20th character surrounding listed historic station buildings.	Local	Common	General character of medium importance at local level. Conservation area of regional significance	Character of majority of area replaceable but not the listed buildings or station itself	Limited changes envisaged with redevelopment of former Wiltshire College site	Limited impact on the character of the area as the buildings will be in keeping with scale and appearance - neutral impact

Reference Sources

Guidance: TAG Unit A3
Evidence: Register of listed buildings, Site visits

Step 5 - Summary Assessment Score

Assessment Score: NEUTRAL
* Slight beneficial impact of reduction in severance and slightly improved appearance of buildings off set by the slight adverse impact on cultural measure.
* Other categories largely neutral as little impact on the land use, density, mix or layout.

Qualitative Comments

The scheme is expected to have a beneficial impact through the reduction in severance for mobility impaired users, albeit this benefit is only slight due to the limited number of users who will be able to benefit. The new structures within the scheme will be designed to be sympathetic to the listed buildings and thus expected to provide a very slight benefit to overall appearance of buildings in the area. This is offset by the general principle of works within the setting of listed buildings. However, in practise the scheme will have only an extremely restricted impacted on townscape as it has neglible impact on layout, land use or density.

2. Historic Environment Impacts Appraisal worksheet

TAG Historic Environment Impacts Worksheet

Step 2		Step 3			Step 4
Feature	**Description**	**Scale it matters**	**Significance**	**Rarity**	**Impact**
Form	1. Listed station buildings encompassing single storey station building with canopys and associated footbridge and two storey railway office each of limestone ashlar and shallow pitched hipped slate roof. Weighbridge office of limestone rubble ground floor and timber clad upper. 2. Listed buildings to north and south encompassing limestone rubble cottages on Monkton Hill and limestone ashlar buildings to the north on New Road and Union Road. 3. Double track railway formation through the station	1. National/regional 2. Local 3. National	1. Medium significance at national/regional. High significance at local level 2. High significance at local level 3. Medium significance at national level	1. Form regionally typical 2. Form locally typical 3. Form regionally typical	1. Scheme has potential for slight adverse impact from works to interior of station building. This should be ameliorated through engagement with conservation officer to preserve and restore historic feautures. 2 & 3. Scheme will not impact form of historic resources - overall slight adverse impact
Survival	1. Good state of survival of station buildings 2. Good state of survival of surrounding listed buildings 3. Good state of survival of railway albeit main line modified over time	1. National/regional 2. Local 3. National	1. High significance at national/regional. High significance at local level 2. High significance at local level 3. High significance at national level	1. Survival regionally typical 2. Survival locally typical 3. Survival nationally typical	1, 2 & 3. Scheme will not impact survival of historic resources - neutral impact
Condition	1. Good condition of station buildings which remain in use 2. Good condition of surrounding listed buildings which remain in use 3. Good condition of railway which remains in use	1. National/regional 2. Local 3. National	1. High significance at national/regional. High significance at local level 2. High significance at local level 3. High significance at national level	1. Condition regionally typical 2. Condition locally typical 3. Condition nationally typical	1, 2 & 3. Scheme will not impact condition of historic resources - neutral impact
Complexity	1. Complex combinaton of station buildings with canopys and footbridge playing an important role in setting alongside railway office. Weighbridge separate across car park. 2. Discrete collection of buildings in surrounding streets. 3. Linear rail corridor with interfaces throughout study area	1. National/regional 2. Local 3. National	1. Medium significance at national/regional. High significance at local level 2. High significance at local level 3. Medium significance at national level	1. Complexity regionally typical 2. Complexity locally typical 3. Complexity regionally typical	1. Scheme will have slight adverse impact on the complexity of the station building through changes to functional operation of building 2 & 3. Scheme will not impact condition of historic resources - overall neutral impact
Context	1. Setting within large surface car parks and low quality commercial buildings detracts from the significant heritage. Association with railway history and IK Brunel plan important part in cultural identity of site. 2. Buildings set within separate ares of historic buildings in the surrounding area but the large surface car parks still detract from the heritage. 3. Railway plays a key role in transport corridor through Wiltshire to Bristol and Bath and is the subject of significant upgrade works. Its history and role with Brunel plays important role in cultural identity of town.	1. National/regional 2. Local 3. National	1. Low significance at national/regional. High significance at local level 2. High significance at local level 3. Low significance at national level	1. Setting nationally typical but railway office association with IK Brunel nationally rare. 2. Context nationally typical 3. Context nationally typical	1. Scheme will have adverse impact on the setting of the station building through installtion of gatelines and new structures north of railway. This is being sensitively treated through listed building consent but remains slight adverse impact. 2 & 3. Scheme will not impact context of historic resources - overall slight adverse impact
Period	1. Station building c1856 built by Rowland Brotherhood. Railway office c1840 built by IK Brunel. Weighbridge office mid C19th 2. Building built in various stages with those on Monkton Hill dating to late C17th/early C18th and those north of railway dating to C19th 3. Railway built by IK Brunel c 1840 and modified many times	1. National/regional 2. Local 3. National/regional	1. High significance at national/regional. High significance at local level 2. High significance at local level 3. High significance at national level	1. Age of station buildings is not unusual for region. Railway office is nationally rare. 2. Buildings nationally typical 3. Railway regionally typical	1, 2 & 3. Scheme will not impact period of historic resources - neutral impact

Reference Sources

Guidance: TAG Unit A3
Evidence: Wiltshire Council Planning Explorer Mapping, Historic England List Entrys (Record of Listed Buildings)

Step 5 - Summary Assessment Score

Assessment Score: SLIGHT ADVERSE
* Adverse impact of scheme on the setting and form of the listed station building through the interior works to the building, installation of gatelines and new structures north of railway. Offset by neutral impact on other resources.
* Other categories largely neutral impact resulting from limited works providing no impact on survival, condition, complexity or period of all historic resources.

Qualitative Comments

The scheme will adversly impact on the form and setting of the station building itself through the interior works to the booking hall and café and the installation of gatelines and new structures, the latter north of the railway. However, this will not impact on the form or setting of other historic resources and synpathetic design will restrict the impact further. Neither will any resources experience impact on their period, survival or condition. An overall slight adverse score is therefore considered appropriate refelcting the limited scope and scale of impact and ability to mitigate.

Appendix 5 Social Impacts worksheets

1. Journey Quality Impacts Appraisal Worksheet

TAG Journey Quality Impacts Worksheet

Factor	Sub-factor	Better	Neutral	Worse
Traveller Care	Cleanliness	**Yes**		
	Facilities	**Yes**		
	Information		**X**	
	Environment	**Yes**		
Travellers' Views	-		**X**	
Traveller Stress	Frustration		**X**	
	Fear of potential accidents		**X**	
	Route uncertainty		**X**	

Reference Source

Guidance: TAG Unit A 4.1 Social Impact Appraisal

Summary Assessment Score

Assessment score: MODERATE BENEFICIAL
* Journey quality impacts on cleanliness, facilities and environment at the station for the approx. 6,000 customers per day.

Qualitative Comments

The scheme will deliver positive impacts on cleanliness, facilities and environment through the provision of new booking hall and cafe facilities and additional staff presence. This will benefit the approx. 6,000 customers a day or around 2 million per annum who use the station plus any non-travelling customers for the cafe or station.

2. Security Impacts Appraisal Worksheet

TAG Security Impacts Worksheet

Security Indicator	Relative importance	Without scheme	With scheme
	(High/Medium/Low)	(Poor/Moderate/High)	(Poor/Moderate/High)
Site perimeters,	Medium	High	High
entrances and exits	High	Moderate	High
Formal surveillance	High	Moderate	High
Informal surveillance	Medium	Moderate	Moderate
Landscaping	Low	Moderate	Moderate
Lighting and visibility	High	Moderate	High
Emergency call	Medium	Moderate	Moderate

Approximate Number of Users Affected

The station served around 2 million customers in 2015/16, including unrecorded travel (eg ticketless travel, staff, pass holders etc) and interchanges. This equates to approx 6,000 passengers per day arriving, departing or interchanging. Including non-travelling customers for the café, buses, pick up/drop off, and pedestrians crossing the railway is estimated to increase this to up to 10,000 person movements around the station environs.

Reference Source

Guidance: TAG Unit A 4.1 Social Impact Appraisal
Data: ORR station usage figures. Numbers of non-travelling customers and pedestrian movements estimated - a survey is in progress to validate this figure.

Summary Assessment Score

Assessment Score: MODERATE BENEFICIAL
* High number of travellers affected with up to 10,000 movements per day in the station environs.
* Improvement in most important categories by one category.

Qualitative Comments

The beneficial impact of improved station security at stations provided through improved quality facilities, increased staff presence and restricted access to platforms is well established. It is a key driver of some similar schemes, for example Weston-super-Mare. While it is of less importance in Chippenham, and the majority of the impact will arise in the Do Minimum anyway, the impact is still likely to be moderate.

3. Severance Impacts Appraisal Worksheet

TAG Severance Impacts Worksheet

Change in Severance	Population Affected			
	Chippenham Monkton Area	Location B	Location C	Total Affected
Large negative	0			0
Moderate negative	0			0
Slight negative	0			0
Neutral	2092			2092
Slight positive	198			198
Moderate positive	152			152
Large positive	0			0

Reference Source

Guidance: TAG Unit A 4.1 Social Impact Appraisal
Data: Census 2011 *(Census output areas: E00162773, E00162778, E00162782, E00162784)*

Summary Assessment Score

Assessment Score: MODERATE BENEFICIAL
* Moderate based on impact for mobility impaired users wo have been estimated at up to 350 in areas around the station (not all of whom would use the scheme every day) based on census data (taken from long term health problem or disability stats for those whose day to day activities are limited a little or a lot).

Qualitative Comments

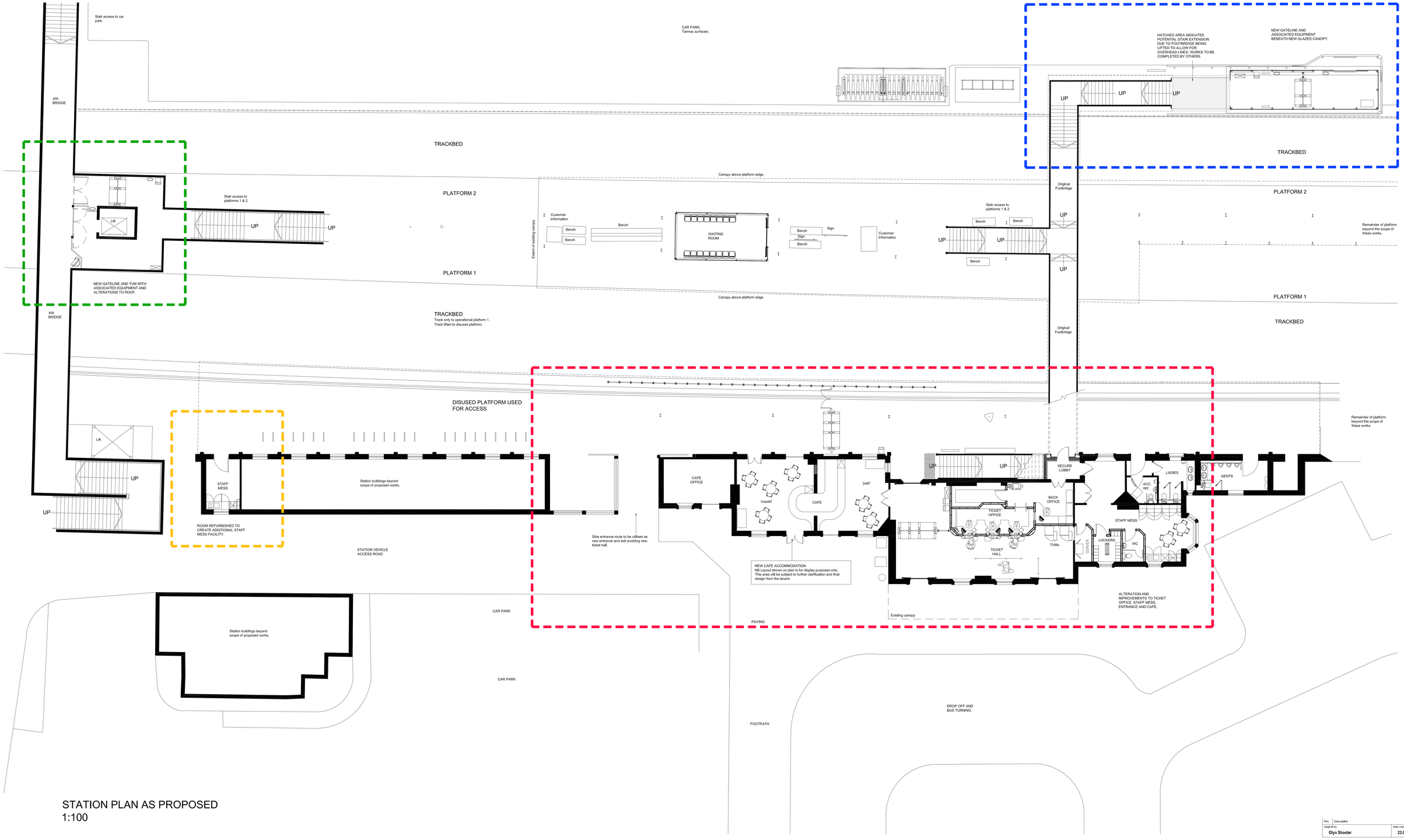
The scheme would have a significant impact on accessibility across the railway or into the station for mobility impaired users from north of the railway. Alternative routes across the railway are limited (use of stairs or long slopes) and there is no step free access to the station from the north. However, significant services lie on either side. In particular, Wiltshire College, the Olympiad Leisure Centre and Wiltshire Council offices lie on the south side. While on the north side lies Hathaway retail park and significant employment opportunities. Severance across the railway has thus been identified as an important issue within the Chippenham Masterplan and providing step free acces across wiill be an important first step prior to providing additional routes across the railway.

Appendix 6 Distributional Impacts assessment

Distributional Impact Appraisal Screening Proforma

Scheme description: Chippenham Station Hub Phase 1
*Part A: Gatelines and station facility improvements including a new booking hall and cafe unit
*Part B: Access improvements including step free access from the north side of the station

Indicator	(a) Appraisal output criteria	(b) Potential impact (yes / no, positive/negative if known)	(c) Qualitative Comments	(d) Proceed to Step 2
User benefits	The TUBA user benefit analysis softw are or an equivalent process has been used in the appraisal; and/or the value of user benefits Transport Economic Efficiency (TEE) table is non-zero.	Appraisal demonstrates a positive outcome in terms of net consumer (non-business) user benefits of £1550k (2010 prices, discounted to 2010)	Distribution across different age groups unknown. Unlikely to be a significant difference.	Only if specifically required to by the SWLEP
Noise	Any change in alignment of transport corridor or any links w ith significant changes (>25% or <-20%) in vehicle flow , speed or %HDV content. Also note comment in TAG Unit A3.	The small mode shift to rail forecast will have a slightly positive impact but this will be very minor and offset by a slight negative impact from operation of additional lift and construction. Overall neutral impact.	The impacts are likely to be minor and hence no further appraisal required.	No
Air quality	Any change in alignment of transport corridor or any links w ith significant changes in vehicle flow , speed or %HDV content: • Change in 24 hour AADT of 1000 vehicles or more • Change in 24 hour AADT of HDV of 200 HDV vehicles or more • Change in daily average speed of 10kph or more • Change in peak hour speed of 20kph or more • Change in road alignment of 5m or more	The small mode shift to rail forecast will have a slightly positive air quality impact but no specific impact on any air quality management areas.	The impacts are likely to be minor and hence no further appraisal required.	No
Accidents	Any change in alignment of transport corridor (or road layout) that may have positive or negative safety impacts, or any links w ith significant changes in vehicle flow , speed, %HGV content or any significant change (>10%) in the number of pedestrians, cyclists or motorcyclists using road netw ork.	The small mode shift to rail forecast will have a slightly positive accident impact but this will be minor.	The impacts are likely to be minor and hence no further appraisal required.	No
Security	Any change in public transport w aiting/interchange facilities including pedestrian access expected to affect user perceptions of personal security.	Positive impact on personal security for rail passengers from restriction of access and increased staff presence.	Distribution across different age groups unknown. Unlikely to be a significant difference.	Only if specifically required to by the SWLEP
Severance	Introduction or removal of barriers to pedestrian movement, either through changes to road crossing provision, or through introduction of new public transport or road corridors. Any areas w ith significant changes (>10%) in vehicle flow , speed, %HGV content.	Provision of new lift on north side of public footbridge at the station will provide step free access across the railway reducing severance.	Particularly positive impact on mobility impaired users including elderly or those with disabilities or with children.	Only if specifically required to by the SWLEP
Accessibility	Changes in routings or timings of current public transport services, any changes to public transport provision, including routing, frequencies, w aiting facilities (bus stops / rail stations) and rolling stock, or any indirect impacts on accessibility to services (e.g. demolition & re-location of a school).	Provision of new lift on north side of public footbridge at the station will provide step free access from the north side into the station. Improved booking hall will include accessible facilities.	Positive impact on accessibility for mobility impaired users including elderly or those with disabilities or with children.	Only if specifically required to by the SWLEP
Affordability	In cases w here the follow ing charges w ould occur; Parking charges (including w here changes in the allocation of free or reduced fee spaces may occur); Car fuel and non-fuel operating costs (w here, for example, rerouting or changes in journey speeds and congestion occur resulting in changes in costs); Road user charges (including discounts and exemptions for different groups of travellers); Public transport fare changes (w here, for example premium fares are set on new or existing modes or w here multi-modal discounted travel tickets become available due to new ticketing technologies); or Public transport concession availability (w here, for example concession arrangements vary as a result of a move in service provision from bus to light rail or heavy rail, w here such concession entitlement is not maintained by the local authority[1]).	No impacts on personal affordability for transport users are expected as a result of the scheme.	No further appraisal required.	No



STATION PLAN AS PROPOSED
1:100

Rev.	Description	Date	Dr by	App by
original by: Glyn Shooter		date created: 23.06.2016		Approved by: --

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E huddersfield@ahr-global.com
www.ahr-global.com

client: GWR Great Western Railway

project: **Chippenham Railway Station**
Ticket Office and Access Improvements

drawing: **Station Plan as Proposed**

project number	scale	
BC.HUD.2016.012.011	1:100	@A0
drawing number: [2]-02	rev: --	issue status: --

1:100
0 1M 2M 5M

ELEVATION 02

1500mm high glazed barrier to be installed to redundant platform edge to prevent circumventing the new gateline ticket barriers.

Canopy edge.

Platform edge.

DISUSED PLATFORM

Access gate to be controlled by ticket gate staff.

ELEVATION 03

2 no. standard and 1 no. wide aisle ticket gates to platform.

Timetable board relocated.

Former area of block paving to be removed and salvaged paving slabs to be laid to match existing platform surface. New tactile [corduroy] paving to be installed to base of existing stairs.

Existing advertising board relocated to position adjacent to stairs.

Timber bench to remain.

New secure lobby formed constructed beneath existing staircase.

UP

Stairs to existing footbridge.

UP

SECURE LOBBY

STEAMERS CAFE

Exact layout and requirements to be confirmed by tenant.

Control units and services cabinet.

STORE

OFFICE

TICKET OFFICE

New opening formed through existing wall.

Existing door to be retained locked shut. door to be overhauled and film added internally.

New partition walls.

STAFF MESS

STAFF LOCKERS

New kitchen units, worktop and cupboards.

TVM

TVM

IT SERVER / STORAGE ROOM

LOCKER ROOM

STAFF WC

New kitchen units, worktop and sink.

Telephone box.

2 no. standard and 1 no. wide aisle bank of ticket gates.

TICKET HALL

Relocated IT server cabinet. Position shown indicative.

Ground access cover.

Post box.

Existing sliding doors to be retained

Existing door removed and replaced with bi-parting automatic powder coated aluminium door to match adjacent entrance door.

EXISTING CANOPY

ELEVATION 01

PLAN AS PROPOSED
1:50

1:50

0 0.5M 1M 2M 4M

Rev	Description	Date	Dr by	App by
A	Notes updated.	08.06.17	ND	

original by	date created	Approved by
M.Wise	01.06.2017	

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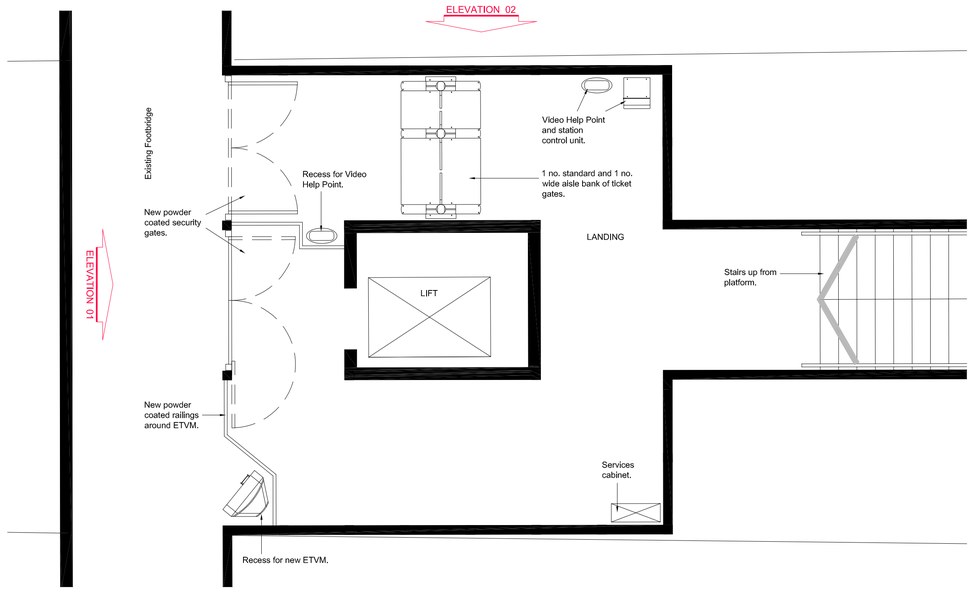
www.ahr-global.com

client: Great Western Railway

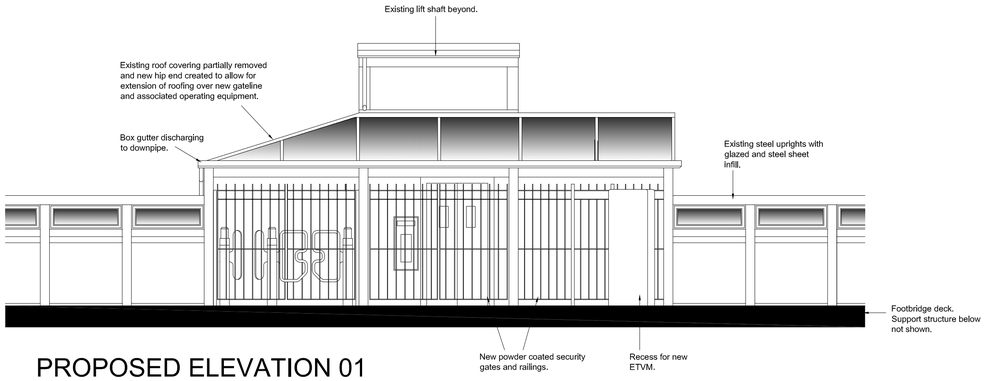
project: **Chippenham Railway Station**
Ticket Office and Access Improvements

drawing: **Ticket Hall and Staff Mess**
Plan as Proposed

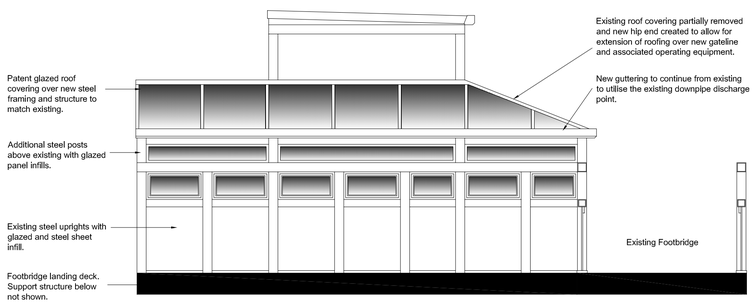
project number	scale	
BC.HUD.2016.012.011	1:50	@A1
drawing number	rev	issue status
[3]-03	A	--



PROPOSED PLAN
1:50



PROPOSED ELEVATION 01
1:50



PROPOSED ELEVATION 02
1:50

Rev	Description	Date	Dr by	App by

originat by	date created	Approved by
Neil Dixon	**06/06/17**	**--**

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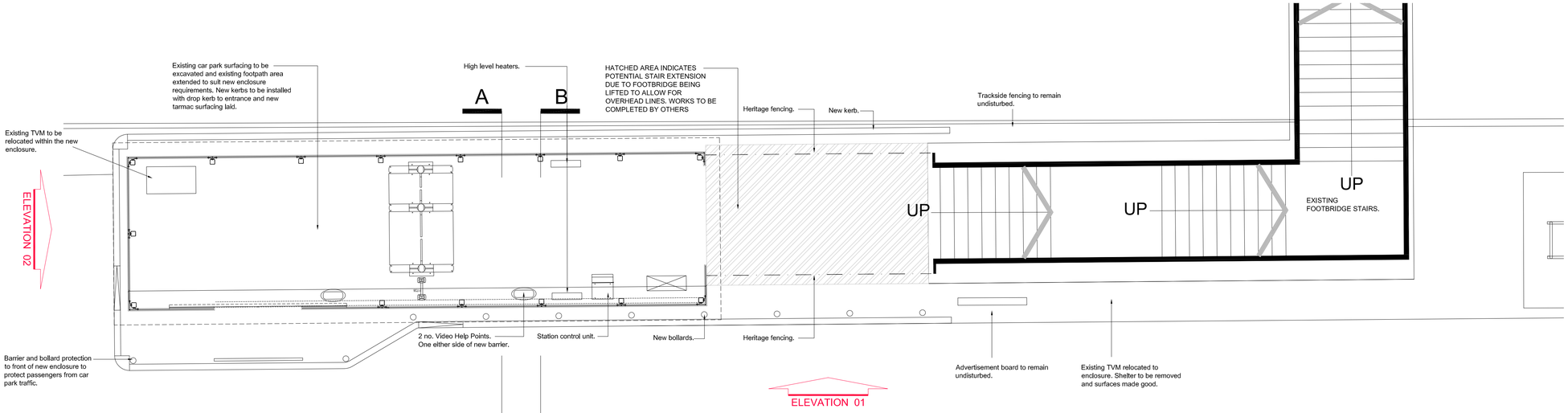
client
Great Western Railway

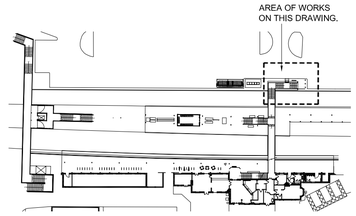
project
Chippenham Railway Station
Ticket Office and Access Improvements

drawing
New Bridge
Proposed Plan and Elevations

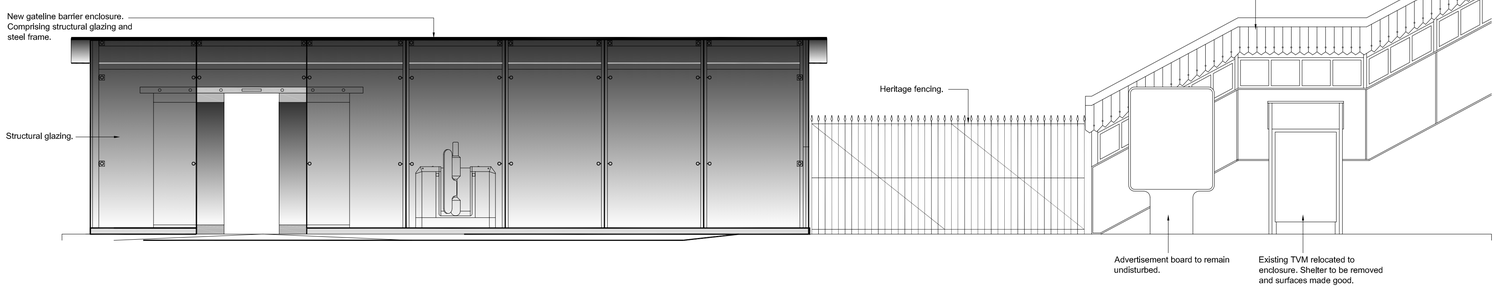
project number	scale	
BC.HUD.2016.012.011	**1:50**	@A1
drawing number	rev	Issue status
[5]-02	**--**	**--**



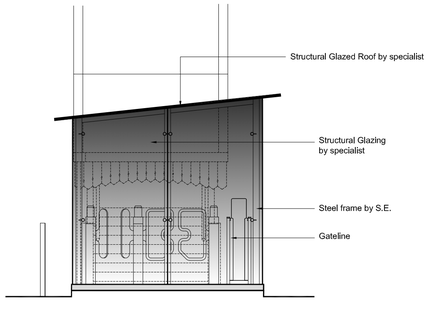
PLAN AS PROPOSED
1:50



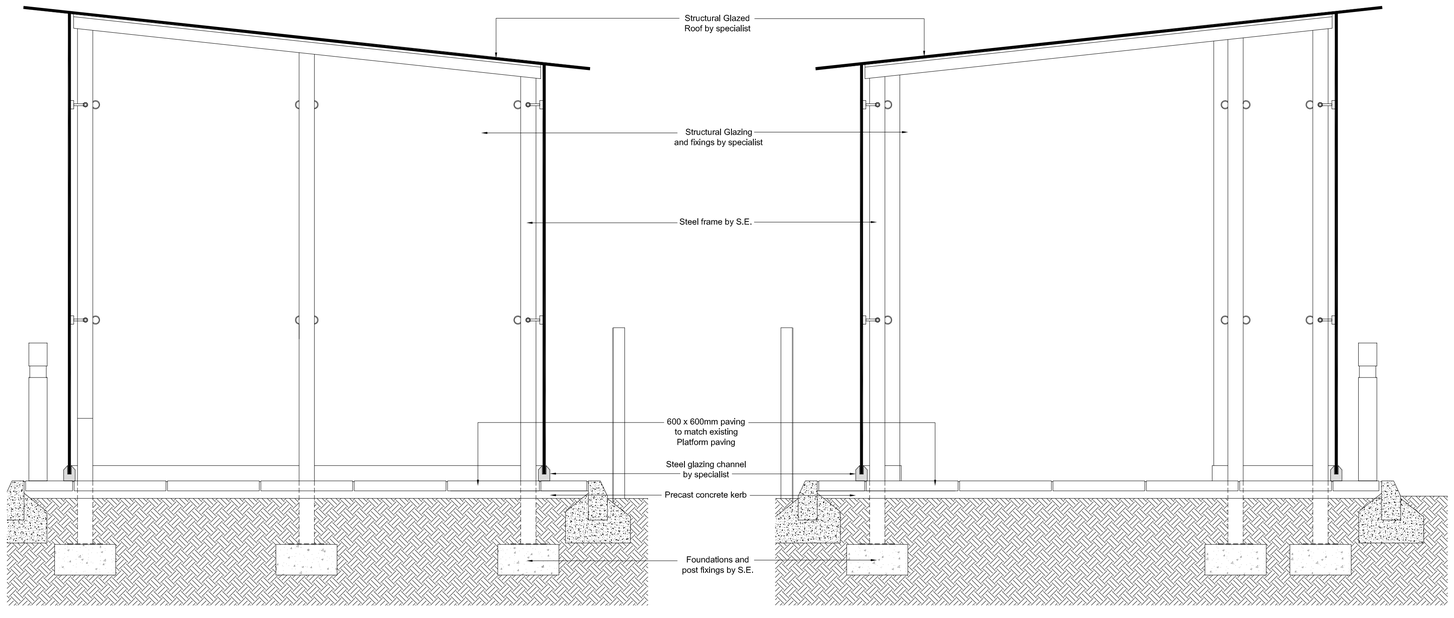
KEY PLAN



PROPOSED ELEVATION 01
1:50



PROPOSED ELEVATION 02
1:50



PROPOSED SECTION AA
1:20

PROPOSED SECTION BB
1:20

1:50
0 0.5M 1M 2M 4M

Rev	Description	Date	Dr by	App by
original by: Glyn Shooter		date created: 22.06.2016		Approved by: --

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client: Great Western Railway

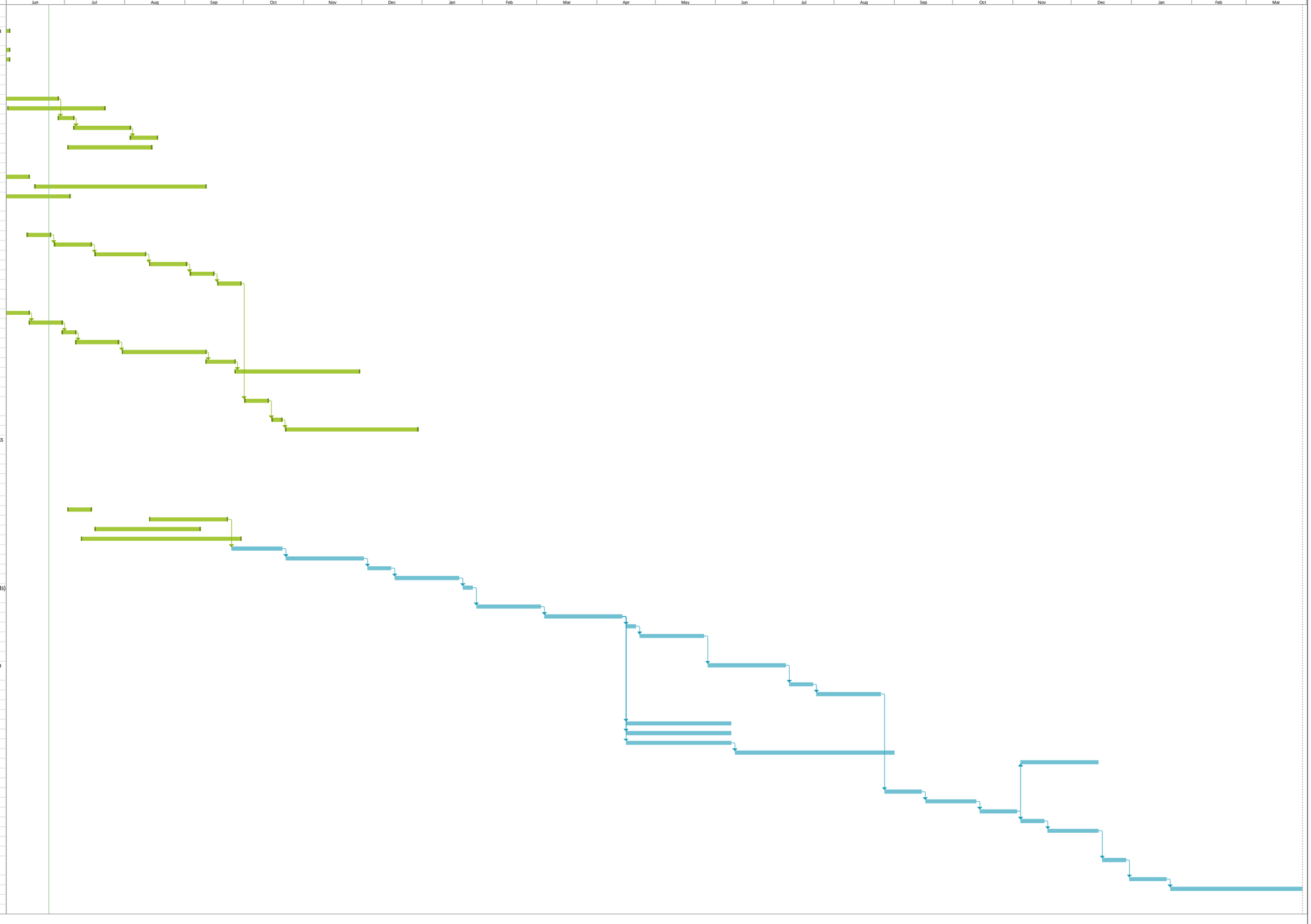
project: **Chippenham Railway Station**
Ticket Office and Access Improvements

drawing: **North Car Park Entrance**
Proposed Plan and Elevations

project number	scale	
BC.HUD.2016.012.011	1:50	@A1
drawing number: [4]-02	rev: --	Issue status: --

Chippenham Station Gateline Replacement

ID	Task Name
1	**Part A**
2	**Detailed Design & Specification**
3	Preparation of detailed design and specification
4	Station Design Co-ordination review
5	Client review of detailed design
6	
7	**Network Rail Approvals**
8	Form 001 re-submission
9	Form 001 approval period
10	Landlord Consent approval period
11	Form 002 and 003 submission
12	Form 002 and 003 approval period
13	Respond/Close out Form 2 Queries
14	Station Change Notification
15	
16	**Planning Approvals**
17	Preparation of Listed Building application
18	Listed Building approval
19	Preparation of DIA/Context Report and consultation 20 days
20	
21	**Procurement**
22	Cost Consultant review cost plan
23	Prepare tender docs
24	Tender period 20 days
25	Tender adjudication
26	Stand still period
27	Contractor appointment
28	
29	**Enabling works**
30	Temporary Ticket Office Design
31	Quotation for TTO
32	Place Order for TTO
33	TTO Shop Drawings
34	Manufacture TTO
35	Deliver/Fit Out Temporary Ticket office
36	Provide Temporary Retail Unit
37	
38	**Construction works**
39	Preparation of construction phase plan and access permits
40	Contractor mobilisation
41	Main construction works
42	North gateline works (TBC once NR bridge works complete)
43	
44	**Contract Completion and Handover**
45	
46	**Part B**
47	**Preliminary Design**
48	Project Brief and Mandate
49	Design Capital Expenditure authority
50	Design Consultants selection
51	BAPA negotiation
52	Site surveys/investigation
53	Preparation of preliminary design
54	Form 001 submission
55	Form 001 approval period
56	Form 001 submission 2 (address Cat 3 comments)
57	Form 001 approval period
58	Preparation of developed design
59	Form 002 submission
60	Form 002 approval period
61	
62	**Detailed Design & Specification**
63	Preparation of detailed design and specification
64	Form 003 submission
65	Form 003 approval period
66	
67	**Consents and Approvals**
68	Station Change Notification
69	Landlord Consent approval period
70	Listed building application
71	Listed building consent
72	Construction Capital Expenditure authority
73	
74	**Procurement**
75	Tender preparation
76	Tender period
77	Tender evaluation
78	Stand still period
79	Contractor appointment
80	
81	**Contruction works**
82	Preparation of construction phase plan and access permits
83	Contractor mobilisation
84	Main construction works
85	
86	**Contract completion and Handover**



Project: Chippenham Station Hub
Date: Fri 23/06/17

Task | Milestone | Project Summary | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only | External Tasks | Deadline | Manual Progress
Split | Summary | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only | External Milestone | Progress

Chippenham Station Hub Phase 1							RISK / ISSUE REGISTER - June 2017			
No	Project Element	Risk/Issue Identification/Description	Issue/Risk Owner	Probability	Impact	Risk Score	Action/Mitigation	Probability	Impact	Mitigation Score
1	Commercial	NR asset protection arrangements cannot be agreed in a timely manner causing delay to NR approvals	NR	3	3	27	Early engagement with NR asset manager and sponsor. Presentation at RAM surgery	2	3	18
2	Commercial	Funding agreement cannot be agreed in a timely manner	GWR/LEP	3	4	48	Early engagement with LEP including sharing existing GWR DfT approved LEP agreement forms	2	4	32
3	Design	NR will not approve alterations to AfA bridge	NR	2	3	18	Early engagement with NR asset manager and sponsor. Presentation at RAM surgery	1	3	9
4	Design	Design coordination with the wider station hub scheme causes delay	GWR	3	2	12	Engagement through Station Masterplan Steering Group to manage risk	2	2	8
5	Design	Insufficient power supply for additional lift necessitating power upgrade	GWR	2	4	32	Early completion of power supply survey	2	4	32
6	Design	Tenant will not agree to specification of works necessitating additional works	GWR	2	2	8	Early engagement completed with tenant and ongoing dialogue will be maintained	1	2	4
7	Design	Conservation officer requires additional heritage features causing delay or additional cost	GWR	3	2	12	Ongoing engagement with conservation officer has developed current scheme. This will continue.	2	2	8
8	Design	Telecomms systems are insufficient and require upgrading	GWR	2	3	18	Early completion of telecomms surveys	1	3	9
9	Consents	Local Planning Authority will not agree to use of PD rights	GWR	3	3	27	NR Town Planning Manager engaged to provide expert support	2	2	8
10	Consents	Objections to listed building consent cause delay to scheme	GWR	3	3	27	Close engagement with the conservation officer. Consultation with key stakeholders through Masterplan Steering Group	2	3	18
11	Consents	Objections to landlords consent cause delay to scheme	GWR	2	2	8	Early engagement with NR asset manager and sponsor. Presentation at RAM surgery	2	2	8
12	Consents	Objections to station change cause delay to the scheme	GWR	1	2	4	Early engagement with NR statcion access team. As the sole beneficiary at the station objections are unlikely	1	2	4
13	Construction	Interface with NR electrification works causes delay	Contractor	3	4	48	Coordination meetings in place with NR teams to manage interface	2	4	32
14	Construction	Interface with NR bridge works causes delay	Contractor	4	3	36	Coordination meetings in place with NR teams to manage interface	3	3	27
15	Construction	Unidentified dilapidation issues must be addressed with historic buildings	Contractor	2	4	32	Extensive surveys completed during design and monitoring will continue during construction	2	3	18
16	Construction	Land contamination identified on site causing additional cost and delay	Contractor	1	3	9	Extensive surveys completed during design and monitoring will continue during construction	1	3	9
17	Construction	Construction works cause disruption to customers causing additional compensation costs	GWR	3	2	12	Detailed construction phasing plan to be developed with station management team	2	2	8
18	Safety	Safety validation requires additional car park works to access new lift	GWR	2	4	32	Early engagement with safety team through HAZID and SMS600	2	3	18
19	Safety	Safety validation requires additional platform or bridge works	GWR	2	3	18	Early engagement with safety team through HAZID and SMS600	2	2	8

Chippenham Station Hub Phase 1 Estimate	Date:	Jun-17	

Cost category	20-16/17 prices Factor costs		Comments
Direct works			
Station building works (booking hall, café and gatelines)	335,081		
North gateline works	129,680		
AfA bridge gateline works	103,000		
Lift install		300,000	
Lift E&P		100,000	
Lift civils works		50,000	
Forecourt and interchange works		100,000	
Cycle parking works		50,000	
Cycle hire facility works		20,000	
Sub total	*567,761*	*620,000*	
Indirect Works			
Main Contractors Preliminaries, Overheads & Profit	163,254	124,000	
Gateline Supply	404,441		
Video help point supply	67,034		
Gateline ancillaries	61,608		
TVM	30,000		
CCTV	75,000		
Signage	7,500		
Legal Fees	10,000	10,000	
Disruption to tenant	40,000		
Sub total	*858,837*	*134,000*	
Design, QS & ER			
GRIP 1-5 Design	72,737	38,444	
GRIP 6-8 ER	45,394	23,992	
GRIP 1-5 QS	6,300	3,330	
GRIP 6-8 QS	6,000	3,171	
Sub total	*130,431*	*68,937*	
Project Management & Supervision			
Business Case development	30,000		
Funding agreement development (inc legal fees)	30,000		
GWR PM Fees	40,000	21,141	
NR BAPA Fees	36,718	19,407	
NR Fee	3,672	1,941	
Industry Risk Fund	7,661	4,049	
Sub total	*148,051*	*46,538*	
Sub total cost estimate	**1,705,080**	**869,474**	
Risk & Contingency			
Contingency @ Part A- 10%, Part B - 30%	170,508	260,842	
Sub total	*170,508*	*260,842*	
Total Estimate - Base year prices	**1,875,588**	**1,130,317**	
Inflation	46,874.13	65,219.11	
Total Estimate - Outturn prices	**1,922,462**	**1,195,536**	