

REPORT N° 1

THAMES VALLEY PARK PARK AND RIDE

FULL BUSINESS CASE

JULY 2017

THAMES VALLEY PARK PARK AND RIDE

FULL BUSINESS CASE

Wokingham Borough Council

Project no: 70012699

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1 PROJECT BACKGROUND

1.1 INTRODUCTION

- 1.1.1 WSP | Parsons Brinkerhoff has been appointed by Wokingham Borough Council (WBC) to provide transport consultancy services to support a planning application submission and the preparation of a transport business case for funding towards a new Park and Ride at Thames Valley Park (TVP). This business case has been produced to support WBC's application for transport major scheme funding from the Thames Valley Berkshire Local Enterprise Partnership (TVB LEP).
- 1.1.2 The TVB LEP believes in '*collaborative momentum by bringing together business, unitary authorities, education and the community sector to drive the local economy to new levels of growth.*' The Park and Ride is therefore a useful initiative to help grow Wokingham and Reading's economy.
- 1.1.3 This Park and Ride will provide 277 car parking spaces and an alternative travel choice for residents around the Wokingham borough to access Reading town centre by the A4 London Road. The site can be served by an existing shuttle bus service provided by TVP between the business park and Reading town centre. This transport business case looks at the strategic, economic, commercial and management impacts of the TVP Park and Ride.

1.2 EXISTING SITUATION ON A4 LONDON ROAD CORRIDOR

- 1.2.1 The A4 London Road has been identified as the main route for vehicles travelling to Reading town centre from the east, and for links from Junction 10 of the M4. There is a particular pinch point along the route at the intersection of the A4 and A329, which is known locally as Cemetery Junction. East of this junction the corridor has two narrow lanes westbound and a single narrow lane eastbound.
- 1.2.2 The corridor supports 75,000 people movements per day and in 2014 experienced average daily traffic flows of approximately 22,500 vehicles. The route is heavily constrained and subject to frequent congestion. A reduction in traffic levels at peak times is required.
- 1.2.3 Public transport along the A4 London Road between A4/A3290 junctions comprises:
- à Park and Ride from Winnersh Triangle;
 - à TVP Shuttle bus, which operates between Reading train station and Thames Valley Business Park; and
 - à Services 13, 14, 126, 127, 128, 129 and 850.
- 1.2.4 The frequency of these services is provided in Table 1-1.

Table 1-1: Frequency of services

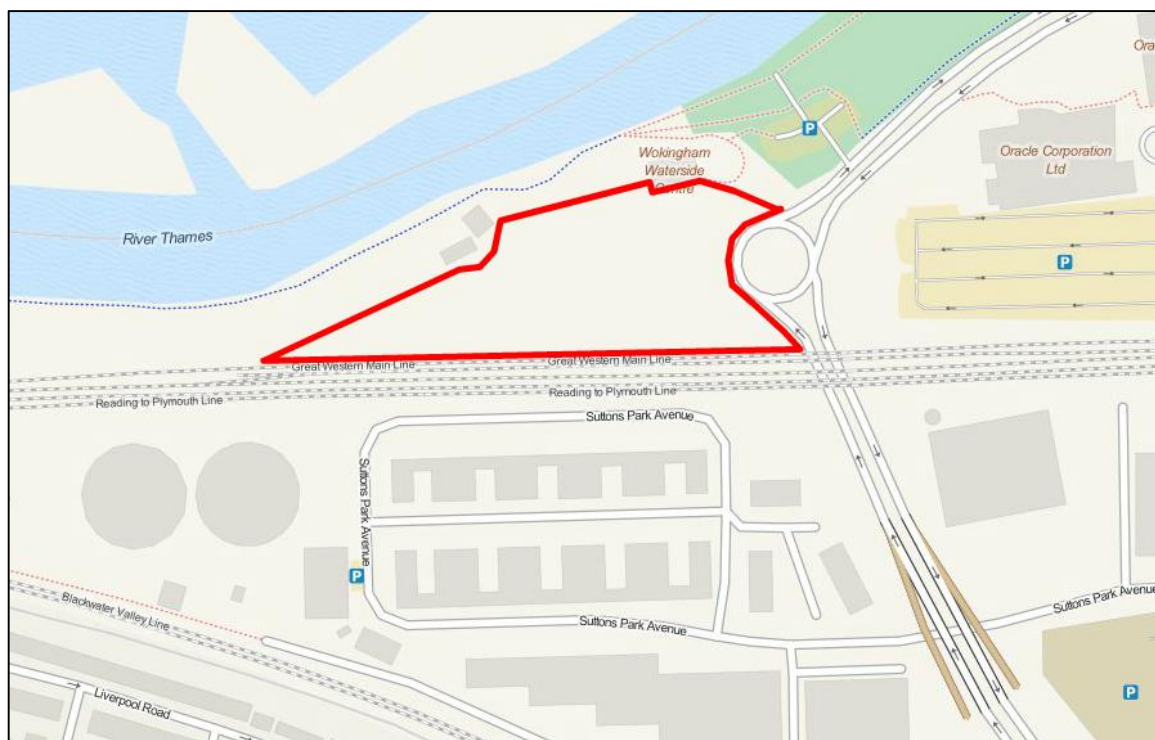
BUS SERVICES	FREQUENCY		
	AM (07:00-10:00)	IP (10:00-16:00)	PM (16:00-19:00)
Winnersh Park and Ride Service	Every 15 mins	Every 15 mins	Every 15 – 20 mins
TVP Shuttle Bus	Every 6-10 mins	Every 15-30 mins	Every 6-10 mins
Service 13	Every 20-30 mins	Every 30 mins	Every 20-30 mins
Service 14	Every 20-30 mins	Every 30 mins	Every 20-30 mins
Service 126-129	Every 30 mins	Every hour	Every 30-60 mins
Service 850	Every 30-50 mins	Every 20-40 mins	Every 20-50 mins

1.3 SCHEME PROPOSALS

1.3.1 The proposed location of the TVP Park and Ride site is a triangular, wedge shaped section of land, approximately 1.35ha, south of the River Thames and west of the Thames Valley Business Park. The site location is shown on Figure 1-1. The Park and Ride scheme comprises:

- à 277 parking spaces (including 6 disabled spaces);
- à Two Park and Ride bus stops for 12m long single decker buses;
- à Space for motorcycle and cycle parking; and
- à Bus shelter facilities.

Figure 1-1: Thames Valley Park Park and Ride Site Location



- 1.3.2 It is proposed that the Park and Ride will primarily be used for employment trips into central Reading, to reduce the peak time congestion experienced on the A4 inbound in the AM peak and outbound in the PM peak. The facility would be served by the existing TVP shuttle bus service which operates between the business park and Reading town centre. Currently this service operates empty towards central Reading in the morning and towards TVP in the evening. The proposals would therefore utilise the shuttle service's spare capacity.

1.4 KEY AIMS AND OBJECTIVES

- 1.4.1 The Park and Ride project will help to improve access to Reading along the A4 corridor. This improved access by public transport will help to reduce congestion and support economic growth.
- 1.4.2 Furthermore, between now and 2026 Wokingham Borough is set to deliver 13,000 new homes, of which 4,450 are located surrounding the A329 corridor in Winnersh (450 units), North Wokingham (1,500) and South Wokingham (2,500). The Park and Ride will support this growth by providing additional public transport capacity into central Reading to accommodate the increased usage.
- 1.4.3 The objectives of the scheme are:
- à To support the forecast housing growth of 13,000 units by 2026 in Wokingham Borough;
 - à To reduce congestion on the A4 corridor;
 - à To encourage car drivers to access central Reading using public transport; and
 - à To support other Park and Rides, including Winnersh Triangle Park and Ride.

1.5 BACKGROUND TO BUSINESS CASE

- 1.5.1 The proposed park and ride site is part of a wider national and local commitment to improve the transport network and to reduce congestion at constrained locations. It has been identified that Reading requires a reduction in congestion levels to enhance the areas economic productivity. As a result, Reading and Wokingham Borough Council's have already implemented a range of schemes to reduce congestion on particularly congested links on the road network. These schemes have included the Mere oak Park and Ride on the A33, the Winnersh Park and Ride on Wharfedale Road, the Ready Bike Hire Scheme, a pedestrian / cycle bridge and the regeneration of Reading Railway Station. These schemes have had considerable success in alleviating congestion in constrained areas and encouraging people to use more sustainable modes of transport.
- 1.5.2 A Transport Assessment was submitted to Wokingham Borough Council as part of a planning application for the new park and ride at TVP during June 2016 which identified that the A4 and A329 in east Reading experience high levels of congestion and poor air quality issues. Therefore the proposed park and ride site at TVP would build on previous progress made in reducing congestion in Reading's most congested areas.
- 1.5.3 By reducing congestion and improving connectivity, the scheme will help support a mode change from single occupancy car journeys to bus travel.

1.6 BACKGROUND OF SUPPORT

- 1.6.1 A public consultation for the proposed scheme was held between 4th November and 4th December 2015; this comprised of three main elements to inform relevant stakeholders and members of the public about the proposal:
- à A four page consultation leaflet
 - à Two public exhibitions

à An online consultation survey.

- 1.6.2 In total 100 people responded to the consultation questionnaire and approximately 40 individuals attended the two public exhibitions at the Wokingham Waterside Centre.

KEY ISSUES AND RESPONSES

- 1.6.3 **Questionable need for the Park and ride**
The park and ride site would provide a new alternative means of reaching Reading town centre from the east. Cemetery Junction suffers from congestion, and the park and ride will allow some working in Reading to park their vehicle on the outskirts of the town, and use the bus to reach the town centre. Doing so will help to relieve pressure on car parking facilities in town, and on the local road network. Subject to agreement, the TVP shuttle bus will be used as a means of travelling into town – at present, daytime services into Reading are largely empty, as are evening services coming out of town.
- 1.6.4 **Duplicate of existing park and ride sites**
The TVP park and ride would provide a park and ride option for those visiting from along the A4 corridor (Twyford and Henley on Thames) which is not currently served by the park and ride sites at Mere oak and Winnersh Triangle. The site at Winnersh Triangle would necessitate driving away from Reading to use the bus – this may put some drivers off using this option. The TVP park and ride site therefore serves a new market along the A4 corridor, and does not duplicate existing park and ride facilities.
- 1.6.5 **Why not extend existing park and ride sites**
Extending the park and ride site at Winnersh Triangle would involve adding another tier to the car park, increasing its visual intrusion, and would presently be uneconomical. Furthermore, expansion of existing sites would fail to serve the potential new user market along the A4 corridor.
- 1.6.6 **Concerns about the effect on the existing TVP shuttle bus service**
Subject to agreement, the TVP shuttle bus would call at the park and ride site going into town on a morning and coming out of town on an evening. This would have minimal impact on journey times, and would enable the bus to be used in the opposite direction to its current peak passenger flows.

- 1.6.7 **Concerns about the riverside towpath**
The park and ride site would not involve the removal or alteration of the Thames riverside towpath.
- 1.6.8 **Loss of amenity space**
The existing site is largely overgrown and difficult to access – the Thames riverside would be undeveloped and remain usable as amenity space.
- 1.6.9 **Visual impact on the riverside**
Mitigation measures would be employed to screen the park and ride site from the riverside, including planting and landscaping as is deemed necessary to protect riverside views.
- 1.6.10 **Site would block the proposed road to Tesco**
The car park access road would retain an alignment option for the East Reading Mass Transit Route (MTR) should this be developed in future. The development of the park and ride does not jeopardise the potential development of the East Reading MTR.
- 1.6.11 **Development is a way of enabling development of East Reading MTR**
The East Reading MTR is a separate project from the park and ride proposal and is not part of this consultation programme. Any future proposals to develop the East Reading MTR will be subject to a separate consultation exercise.
- 1.6.12 **Traffic from TVP will increase**
Detailed traffic modelling has been undertaken as part of the planning application, and show that the park and ride site would remove car trips from the main link between the A3290 and Cemetery Junction. Any increases in traffic flow would be due to factors beyond the park and ride development.
- 1.6.13 **Wokingham Waterside Centre Car Park may be used for park and ride**
It is expected that car parking at the park and ride site will be charged at a rate of £6 per day – with the TVP shuttle bus being free to use. Park and ride users would have their parking ticket checked on boarding, and those without a parking ticket would not be permitted to use the service. This should discourage park and ride users from parking at the Wokingham Waterside Centre. A further option is that a refundable parking charge may be introduced for users of the Waterside Centre.

1.7 STRUCTURE OF REPORT

- 1.7.1 This document follows the guidance provided in DfT's Business Case Guidance and is set out as follows:
- à Chapter 2: Strategic Case;
 - à Chapter 3: Economic Case;
 - à Chapter 4: Financial Case;
 - à Chapter 5: Commercial Case;
 - à Chapter 6: Management Case; and
 - à Chapter 7: Conclusion.

2 STRATEGIC CASE

2.1 AREA DESCRIPTION

- 2.1.1 The TVP Park and Ride site is located in Wokingham Borough, approximately 2km east of Reading town centre. The A3290, which becomes the A329(M) at Winnersh, can be accessed via the TVP access roundabout directly to the east. The A329(M) provides access to junction 10 of the M4, approximately 7km to the south east of the site. The A4 corridor between central Reading, TVP and areas in the east such as Twyford and Maidenhead, is located 0.5km to the south of the site, via the A3290.
- 2.1.2 Wokingham is a major employment centre within the south east, comprising the two major business parks of Thames Valley Park and Winnersh Triangle, which are home to large international companies, including Microsoft, Oracle, Jacobs and BG Group. Central Reading is also a key employment destination, and has a growing number of large companies including HSBC, Barclays, Thames Water and Yell.
- 2.1.3 The proposed site is located directly to the west of Thames Valley Business Park and to the south of Wokingham Waterside Centre. The site is currently green space and the scheme would require the use of land currently owned primarily by Oracle.
- 2.1.4 There are currently nearly 13,000 new homes proposed to be built in Wokingham Borough, and a further 5,210 in Reading by 2026. The proposed Park and Ride would improve accessibility from the east into central Reading.

2.2 SOCIO-ECONOMIC CHARACTERISTICS OF STUDY AREA

- 2.2.1 At the time of the 2011 Census, Wokingham and Reading boroughs had populations of 154,380 and 155,698, respectively. The socio-economic analysis of the area will be based upon 2011 Census data for Wokingham Borough. Key statistics for the area include:
- à The borough has the highest level of average car ownership out of all Unitary Authorities in England, with 1.64 cars per household. Certain Middle Super Output Areas (MSOA) in the borough have car ownership levels of 1.98;
 - à Approximately 70% of the borough's population is economically active;
 - à Across the borough, 73% of people travel to work by car, however it is as high as 82% in some MSOAs; and
 - à Over 8% of people living in Wokingham travel to work in central Reading, 43% of which drive to work.

2.3 POLICY CONTEXT FOR SCHEME DELIVERY

- 2.3.1 The TVP Park and Ride has been identified in a number of local and regional policy documents as a key scheme to be brought forward. The scheme is included in the following policies and plans:
- à Thames Valley Berkshire LEP Strategic Economic Plan;
 - à Revoked South East Plan;
 - à Reading Borough Council's Core Strategy;
 - à Reading Borough Council's Local Transport Plan;

- à Wokingham Borough Council's Core Strategy; and
- à Wokingham Borough Council's Local Transport Plan 3.

2.3.2 This chapter outlines the strategic case for the TVP Park and Ride and how the facility fits into current national, regional and local policies and aspirations.

BUSINESS STRATEGY: NATIONAL TRANSPORT PRIORITIES

2.3.3 The National Planning Policy Framework (NPPF) states that '*plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people*'. The proposed TVP Park and Ride facility promotes sustainable transport by increasing accessibility between Wokingham borough and the wider area, and Reading.

2.3.4 The proposed scheme supports sustainable economic development in the area, providing additional public transport capacity to help to '*deliver the homes, business and industrial units, infrastructure and thriving local places that the country needs*'.

BUSINESS STRATEGY: REGIONAL TRANSPORT PRIORITIES

THAMES VALLEY BERKSHIRE LEP STRATEGIC ECONOMIC PLAN

2.3.5 The Thames Valley LEP submitted their Strategic Economic Plan in March 2014. It outlines the economic case for the investment in infrastructure, enterprise and employment that is required to support the Thames Valley region's economic growth.

2.3.6 The TVP Park and Ride has been prioritised within the TVB Implementation Plan as it will '*enhance urban connectivity*'.

BUSINESS STRATEGY: LOCAL TRANSPORT PRIORITIES

WOKINGHAM BOROUGH CORE STRATEGY

2.3.7 WBC's Core Strategy identified the need for '*high quality express bus services... via the Park and Rides*', particularly along the A4 and A329 corridors between Reading and Wokingham, which the proposed scheme would support.

2.3.8 It has been noted that the construction of the TVP Park and Ride would aid any planning obligations for the developers involved in the delivery of the Strategic Development Locations (SDL), in particular North Wokingham (1,500 homes) and South Wokingham (2,500 homes). The developers would be expected to enter a legal agreement to ensure that the surrounding infrastructure and facilities are adequate to support the development and the surrounding area. Proposed measures include:

- à Improvements to the quality and frequency of public transport services along any part of the network;
- à High quality express bus service or mass rapid transit along A329; and
- à Measures to improve accessibility by non-car modes along the A321 and A329 corridors.

WOKINGHAM BOROUGH COUNCIL LOCAL TRANSPORT PLAN 3

2.3.9 WBC's Local Transport Plan (LTP3) for the period 2011-2026 has a policy specifically related to Park and Ride facilities, Policy PT8. It states that the '*Council will promote the use of Park and Ride services and will support the future introduction of new sites in the Borough where feasible*.' The LTP3 summarises the benefits of Park and Ride facilities as:

- à Enhancing the economic viability of town centres;
- à Reducing congestion; and
- à Promoting sustainable travel.

2.3.10 Policy PT8 also outlines plans to work cross-boundary with Reading Borough and Bracknell Forest Councils to deliver and retain the following Park and Ride facilities:

- à To the west of Coppid Beech Roundabout on the A329 in Wokingham;
- à In the vicinity of the M4 junction 11 (Mereoak);
- à The relocation or retention of the Park and Ride at Winnersh; and
- à A Park and Ride located in TVP to complement the high quality express bus services or mass rapid transit along the A4 or A329 corridors into central Reading.

2.3.11 In addition, Policy SP1 supports the Park and Ride proposals by stating that Wokingham Borough Council will '*actively support development of suitable major transport projects that are necessary to support the future growth and success of the borough.*' It also states that future transport growth needs to be managed effectively to support the build out of the SDLs, which without any transport network mitigation would result in an increase in overall journey times of 22%.

READING BOROUGH COUNCIL CORE STRATEGY

2.3.12 Reading Borough Council's (RBC) Core Strategy was adopted in January 2008 and updated in January 2015. Policy CS21 on Major Transport Projects states that as '*a regional transport hub, priority will be given to the implementation of the priority transport projects identified in the Local Transport Plan, particularly the upgrading of Reading Station interchange, Park and Ride Sites, Mass Rapid Transit, road improvements, Quality Bus Routes and associated transport improvements. Land needed for the implementation of priority transport projects will be safeguarded from development, to enable their future provision.*'

READING BOROUGH COUNCIL LOCAL TRANSPORT PLAN 3

2.3.13 RBC's vision for transport in the borough, as outlined in their LTP3, is that '*Transport in Reading will better connect people to the places that they want to go: easily, swiftly, safely, sustainably and in comfort.*' The council pledges to promote prosperity for Reading by providing a transport system to accommodate residents travelling for all journey purposes and by all modes, helping to '*meet the challenges of a dynamic, low carbon future.*'

2.3.14 Reading Borough Council also produces Area Action Plans (AAP's) including an Eastern Local Action Plan, which identifies that the '*A329(M) and the A4...suffer congestion during peak periods at Sutton Seeds Roundabout, which is attributed to the conflicting movements at the roundabout and the bottleneck at Cemetery Junction*'. The Action Plan outlines a number of future plans relating to the provision of Park and Ride facilities in the area:

- à '*To work with Wokingham Borough Council to progress the implementation of a long term Park and Ride strategy, considering alternative sites to Loddon Bridge, including the possible use of Broken Brow at the northern end of the A329(M);*
- à '*To work with neighbouring authorities to deliver an enhanced interurban public transport network;*
- à '*To work with the private sector and Wokingham Borough Council to innovate and secure delivery of integrated transport choices associated with new development proposed within Wokingham Borough; and*

à *To work with Wokingham Borough Council to deliver an East Reading Transport Link and associated Park and Ride facilities.'*

2.4 PROBLEMS IDENTIFIED AND OBJECTIVES

- 2.4.1 The TVP Park and Ride scheme, the location of which is shown in Figure 2 -1, has been identified by WBC as a measure to help reduce congestion on the A4 corridor, and central Reading. The A4 corridor supports 75,000 people movements per day and in 2014 experienced average daily traffic flows of approximately 22,500 vehicles. The route is heavily constrained and subject to frequent congestion. A reduction in traffic levels at peak times is required.
- 2.4.2 Furthermore, between now and 2026 Wokingham Borough is set to deliver 13,000 new homes, of which 4,450 are located surrounding the A329 corridor in Winnersh (450 units), North Wokingham (1,500) and South Wokingham (2,500). The Park and Ride will support this growth by providing additional public transport capacity into central Reading to accommodate the increased usage.
- 2.4.3 The TVP Park and Ride has been identified in the TVB LEP Implementation Plan as a result of its potential contribution to *'enhancing urban connectivity.'*
- 2.4.4 Table 2-1 and Table 2-2 outline the transport challenges in Wokingham and Reading boroughs, respectively, as described in their LTP3s, and how the TVP Park and Ride would help to resolve these issues by meeting these objectives.

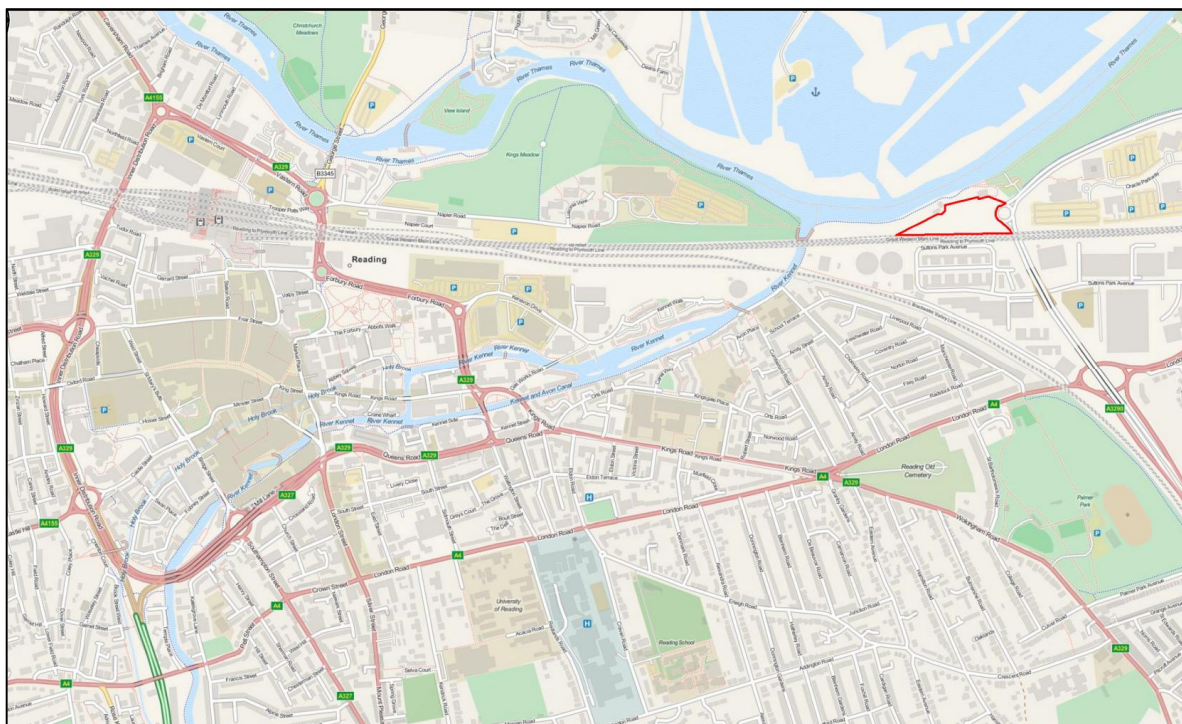
Table 2-1: Challenges for Wokingham Borough Identified in Wokingham's LTP3

CHALLENGE IDENTIFIED	HOW WILL THE TVP PARK AND RIDE HELP?
Support economic growth	TVP Park and Ride will provide improved access to Reading town centre, supporting the businesses located in these areas and the commercial areas in central Reading
Tackling climate change	Improved accessibility by public transport will encourage more people to switch from using the private car for trips into central Reading, and to use the bus instead. This will reduce congestion and emissions
Promoting equality of opportunity	This challenge concerns the accessibility and affordability of public transport to access key services and destinations. The Park and Ride will improve transport access to central Reading which is a key employment centre as well as the location of a number of key services
Contributing to better safety, security and health	A reduction in the number of vehicles will reduce the chance of accidents, and improve the local air quality
Improving quality of life and a healthy natural environment	Reduced congestion will lead to reduced driver stress and improved air / noise quality

Table 2-2: Challenges for Reading Eastern Area Identified in Reading's LTP3

CHALLENGE IDENTIFIED	HOW WILL THE TVP PARK AND RIDE HELP?
Network efficiency	TVP Park and Ride will provide improved access to Reading town centre, reducing congestion on key road corridors and improving journey times for all users, especially at peak times
Future development proposals	The Park and Ride will provide an alternative method of transport into Reading town centre, supporting the increased demand from future developments in both Reading and Wokingham boroughs, and other surrounding local authorities
Public transport accessibility	The scheme will provide a frequent bus service into Reading town centre, improving public transport accessibility for residents in the eastern area of Reading borough [from Reading BC LTP3]
Park and Ride Provision	In addition to the Park and Ride at Winnersh Triangle, the TVP Park and Ride will provide additional capacity to support future demand

Figure 2 -1: Site Location in the Context of the Local Highway Network



2.5 THE IMPACT OF NOT CHANGING

2.5.1 Without the introduction of the measures proposed by the TVP scheme, congestion along the A4 will remain high at peak periods, and will become intensified by future traffic growth from SDLs and employment areas.

2.5.2 Specific outcomes of a 'Do Nothing' scenario include:

- à The economic future of Reading will not be as competitive for private sector businesses as other boroughs;
- à Increased congestion and noise along the A4 will affect commuting, educational and leisure trips;
- à Increased congestion and noise along the A4 will affect local residents' quality of life; and
- à There will be further reductions in air quality, particularly along the A4 which is a designated Air Quality Management Area (AQMA) for Reading.

2.6 MEASURES OF SUCCESS

2.6.1 Prior to scheme construction, a programme of monitoring will be put in place, which will also include monitoring one and five years following the completion of the scheme. This will include before and after monitoring of:

- à Traffic congestion and journey times;
- à Bus patronage; and
- à Car park demand.

2.6.2 Monitoring will also be undertaken against the objectives listed in Tables 2-1 and 2-2, in particular:

- à tackling climate change
- à network efficiency
- à public transport accessibility/promoting equality of opportunity
- à better safety/security/quality of life

2.6.3 The scheme will also be measured against delivery of park and ride provision and supporting future development and economic growth.

2.7 SCOPE

2.7.1 The TVP Park and Ride Scheme only covers the proposed Park and Ride to the west of the A3290/Thames Valley Park Drive roundabout and the use of the existing TVP Shuttle Bus via its existing route to/from Reading Town Centre and Reading Station.

2.8 CONSTRAINTS

2.8.1 The proposed scheme has a number of potential constraints, which have been or will be mitigated accordingly:

- à **Constraint 1:** The potential impact on ecological receptors including some trees.
- à *Mitigation:* An ecological assessment and species surveys has been undertaken and a report has been produced on the findings. This has allowed appropriate mitigation to be identified. In addition, the scheme will be designed to minimise the number of trees affected, with plans to relocate or replace those affected.
- à **Constraint 2:** The site is located east of an AQMA in Reading.
- à *Mitigation:* A quantitative air quality assessment will be undertaken and a technical report produced.
- à **Constraint 3:** The extreme northern and eastern boundaries of the site are located in Flood Zone 3 which has a 'high probability' of flooding (greater than a 1 in 100 (1%) annual probability).
- à *Mitigation:* A flood risk assessment has been conducted along with proposed mitigation measures.

2.9 INTER-DEPENDENCIES

2.9.1 The delivery of the TVP Park and Ride is dependent on a number of factors, which risk not coming forward and consequently affecting the scheme. The key inter-dependencies are as follows:

- à The approval of planning permission;
- à The allocation of funding from the TVB LEP;
- à Funding coming forward from developer contributions; and
- à Ecological studies finding protected species which need to be given appropriate mitigation stakeholders

2.9.2 The stakeholders which have been consulted regarding the scheme include:

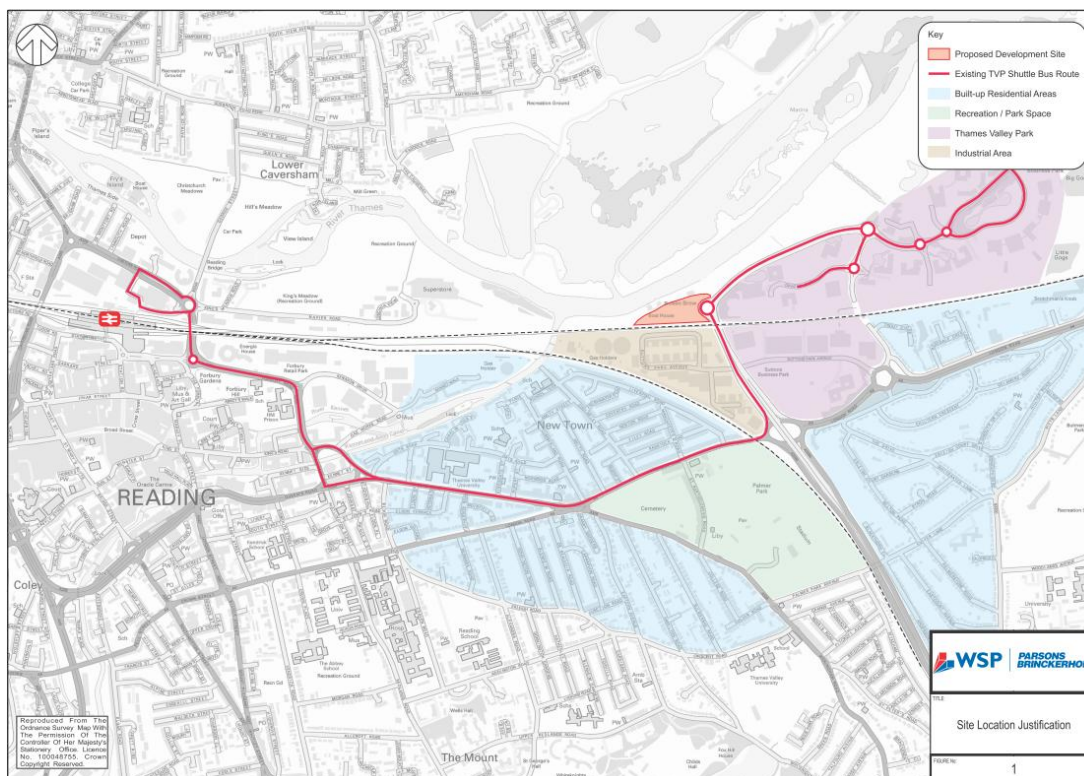
- à Reading Borough Council;
- à Thames Valley Berkshire Local Enterprise Partnership;
- à Thames Valley Business Park landowners; and
- à Local businesses surrounding the site.

2.9.3 More information on the correspondence with stakeholders is provided in section 3.3 below.

2.10 OPTIONS APPRAISAL

- 2.10.1 Due to land availability, only one option was considered for the development of a new Park & Ride. This was the proposed Park & Ride at land adjacent to TVP. The proposed Park & Ride will primarily be used for employment trips into central Reading, to reduce the peak time congestion experienced on the A4 inbound in the AM peak and outbound in the PM peak. The facility would be served by the existing TVP shuttle bus service which operates between the business park and Reading town centre. Currently this service operates empty towards central Reading in the morning and towards TVP in the evening. The proposed location enables the shuttle service's spare capacity to be utilised. Possible alternative locations along the existing route of the TVP shuttle bus route were considered. Figure 2-2 shows the routing of the existing service which is proposed to be utilised as part of development of the Park and Ride. Existing built up areas are identified and highlight the limited land availability along the route of the existing TVP shuttle bus route. Analysis of this route has identified no further locations suitable for the development of a Park and Ride. No spare car parking is available within TVP Business Park as all parking spaces are allocated to current and future tenants.
- 2.10.2 The viability of the selected location relates to the utilisation of the existing TVP shuttle bus service. Whilst the service will utilise the shuttle services spare capacity, this removes the need to for any ongoing funding towards the bus service to be made after initial build out of the TVP Park & Ride.
- 2.10.3 It is stated in Wokingham Borough Council's Local Transport Plan that A Park and Ride located in TVP to complement the high quality express bus services or mass rapid transit along the A4 or A329 corridors into central Reading.

Figure 2-2: TVP Shuttle Bus Route



3 ECONOMIC CASE

3.1 INTRODUCTION

3.1.1 The Economic case describes the assessment of the benefits that the scheme is forecast to deliver to an area. The scheme benefits have been assessed by calculating Marginal External Cost (MEC) Benefits. This is an industry standard tool for undertaking economic appraisal in accordance with guidelines published in WebTAG Unit A1 (January 2014).

3.2 OPTIONS APPRAISED

3.2.1 In developing the economic case one scenario has been tested.

3.2.2 The forecast switch to Park and Ride takes into account the following:

- 1) Proportion of those travelling to Reading Town Centre – 50%
- 2) Proportion of those traveling for Commuter and Business Travel Purposes – 78%
- 3) Proportion of those currently paying for parking in Reading Town Centre – 65%
- 4) Calculated Mode Share for Park and Ride – 33%

3.2.3 It is important that 1), 2) and 3) are applied as journeys to locations other than Reading Town Centre, those travelling for other uses or journeys which currently end with free parking (e.g. free workplace parking) are not applicable.

3.2.4 The proportion of those travelling to Reading Town Centre (50%) is not arbitrary. It has been derived using Mobile Phone data provided by Reading BC, data which is currently being used by Reading BC to update their traffic model.

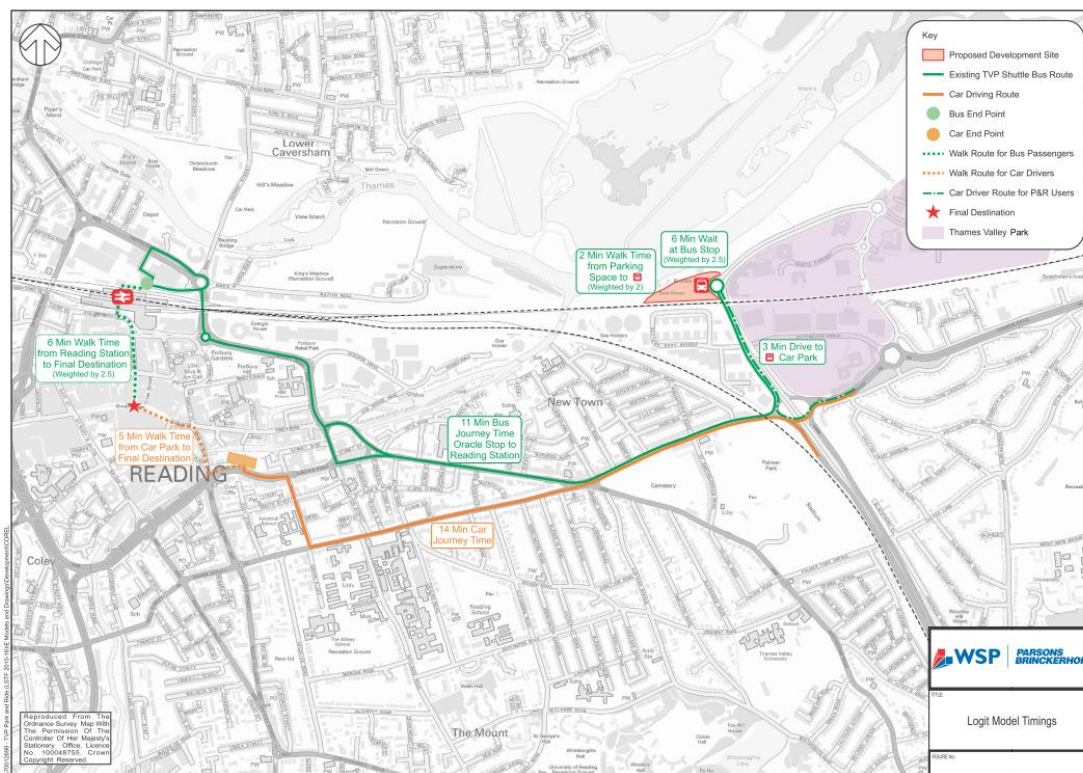
3.2.5 Proportion Travelling for Commuter and Business Travel Purposes (78%) is taken from the Reading Traffic Model (71% Commuter and 7% Business Travel).

3.2.6 A figure of 65% has been used for the proportion of those currently park in Reading Town Centre. Reading BC does not hold recent data on the proportion of those who park in Reading town centre that pay to park. Data from before the introduction of on street parking charges states a figure of around 50% (East Reading Park and Ride Outline Business Case). With the introduction of on street parking charges this figure is expected to be a lot higher and an analysis of the reduced availability of free parking has been undertaken to support the 65% figure used.

3.2.7 The calculated mode share for Park and Ride (33% on opening) is calculated using a spreadsheet Logit model which compares the relative attractiveness of car and Park and Ride. Although there is likely to be some turnover of spaces, especially those spaces used for business travel, the assessment is based on no turnover of spaces. The assessment is based on a slightly lower mode share of 31% from 2026 onwards to reflect a scenario where a slightly higher Park and Ride charge exists which also results in revenue being collected.

3.2.8 Figure 3-1 illustrates individual parameters relating to travel time that have been used in the Logit model.

Figure 3-1: Logit Model Parameters



3.2.9 Parameters to calculate Car Generalised Time include:

- à Car Journey Time – 14 minutes – Based on travel times provided by Google Maps at 8am on a weekday. The range of times in Google for a weekday journey (Tuesday – Thursday) at 8am is 8 to 20 minutes. 14 minutes being the mid-point in this range; and
- à Egress Time – 5 minutes – Based on walk time from Google Maps from Queens Road car park to Broad Street (walk time weighted x2).

3.2.10 Parameters to calculate Park and Ride Generalised Time include:

- à Transfer Time – 3 minutes – Based on journey time in Google from the A4/A3290 slip to the P&R car park;
- à Access Time – 2 minutes – Based on walk time from P&R car parking space (middle of the site) to P&R bus stop (walk time weighted x2);
- à Bus Travel Time – 13 minutes – Value given by operator Stewarts Coaches and checked against timetable;
- à Bus Wait Time – 6 minutes, based on 6 – 12min headway (Note: Between 8am-9am frequency is in fact every 6 minutes) – (wait time weighted x2);and
- à Egress Time – 6 minutes – Based on walk time from Google from bus stops to the north of Reading Station to Broad Street (walk time weighted x2).

- 3.2.11 Various components of generalised cost are weighted in order to reflect the perceived time spent at each stage of the public transport journey. Values of walk time and wait time have been weighted in line with guidance given in Tag Unit M3.2 – Public Transport Assignment Modelling. An additional “Mode Constant” of 10 minutes and a Lambda of 0.04 has been used based on local calibration undertaken by Reading BC for East Reading MRT.
- 3.2.12 Full details of the weightings and calculations are listed in **Appendix B** and the forecast demand for the AM Peak hour and AM Peak period (7-10am) is shown below.

Table 3-1: Forecast Park and Ride Demand

YEAR	AM PEAK HOUR DEMAND	AM PEAK PERIOD DEMAND
2019	102	252
2026	104	262
2033	111	277

- 3.2.13 An AM Peak Period Factor (2.52 x AM Peak Hour) has been used based on the Reading BC Traffic Model. For the purposes of this assessment the shoulders of the Peak period are expected to still be within Congestion Band 4 (75-100% capacity) as the AM Peak Hour (8-9am).
- 3.2.14 Travel times from Google suggest the same journey times at the end of the Peak Period (9-10am), but quicker journey times at the beginning of the Peak Period (7-8am). It is considered that the Journey time from Google for 7am is low so it was checked against Journey Time from Trafficmaster for the A4 corridor into Reading Town Centre, October 2016. The times from Trafficmaster are for a longer distance, starting at the A4/Pound Lane junction, but data shows that the variation in time between the hours in the AM Peak is small, with 8-9am recorded at 21 minutes and 7-8am and 9-10am recorded at 18 minutes.

3.3 COMMUNITY ENGAGEMENT

3.3.1 A public consultation for the proposed scheme was held between 4th November and 4th December 2015; this comprised of three main elements to inform relevant stakeholders and members of the public about the proposal:

- à A four page consultation lead
- à Two public exhibitions
- à An online consultation survey

3.3.2 In total, 100 people responded to the consultation questionnaire and approximately 40 individuals attended the two public exhibitions at the Wokingham Waterside Centre.

3.3.3 Regular meetings have also taken place with stakeholders including Reading BC, Oracle, TVP Business Park, Wokingham Waterside Centre, University of Reading, SSE and SGN to develop the scheme design.

3.4 ASSUMPTIONS

3.4.1 The economic case has been compiled in agreement with the assumptions and methodology recommended by the Department of Transport's WebTAG appraisal guidance for Transport Schemes and the Treasury's Green Book, using the most up to date parameters.

3.4.2 However there are some further assumptions that have been made. The assumptions that have been applied to determine the forecast number of park and ride trips have been listed below in Table 3-2.

Table 3-2: Key Appraisal Assumptions

CRITERIA	ASSUMPTION	SOURCE
Discount Rate	3.5% 0 -30 years 3.0% 31 – 75 years 2.5% 75 – 125 years	WebTAG
Opening Year	2019	General Assumption
Base Year	2010	DfT Base Year
Appraisal Year	60 Years	Based on asset life (no buildings included in the scheme)
Forecast	2033	

3.4.3 The scheme capital cost has been calculated at £3,140,247 at 2010 market prices. The scheme cost includes a QRA figure (P(50) Post Mitigation £194,064 at 2010 prices) and an Optimism Bias of 15%.

3.4.4 The Broad Transport Budget for the scheme is £1,568,167 which excludes forecast Public Sector Revenue and Developer Contributions. Developer contributions are a cost to the private sector and therefore appear as a dis-benefit for the purpose of this appraisal.

3.5 APPRAISAL SUMMARY TABLE

- 3.5.1 The Appraisal Summary Table (AST) is a single page summary of the key aspects of the economic case (seen in **Appendix C**). It focuses on four key appraisal areas, in accordance with guidance presented in WebTAG:
- à Economy;
 - à Environmental;
 - à Social/Distributional; and
 - à Public Accounts.
- 3.5.2 TVP Park and Ride can be considered a small sized project due to the estimated cost of the scheme being less than £5 million. Supporting the AST are a range of specific worksheets relating to the appraisal areas. These can be found in **Appendix D**.

3.6 VALUE FOR MONEY STATEMENT

SCHEME APPRAISAL

ASSESSMENT OF ENVIRONMENTAL IMPACTS

- 3.6.1 There are seven environmental aspects of the scheme which should be considered in the environmental appraisal, following guidance provided in DfT WebTAG Unit A3. These are:
- à Air Quality
 - à Noise;
 - à Greenhouse Gases;
 - à Landscape;
 - à Historical Environment;
 - à Biodiversity; and
 - à Water Environment.
- 3.6.2 An appraisal has been completed for each of these aspects to understand whether the scheme's impact on a scale from significantly beneficial to significantly adverse. Overall, the scheme has been assessed to have a **Neutral impact** on the environment.
- 3.6.3 No worksheet has been completed from Greenhouses Gases, but the results from the MEC calculations have been included in the AST (included in **Appendix C**).
- 3.6.4 **Appendix D** contains all of the worksheets for the environmental appraisals undertaken (labelled **D-ENV-1** and **D-ENV-2**).
- Air Quality**
- 3.6.5 This appraisal considers the impact of the TVP Park and Ride scheme on air quality and vehicle emissions. The appraisal concluded that overall local air quality in relation to annual mean NO₂ concentrations improves (i.e. overall concentrations decrease). No properties are predicted to experience deterioration (when results are considered to one decimal place). It should be noted that traffic flow information was only available for the A4 and the A3290, which are the key roads affected by the scheme.

- 3.6.6 It was also concluded that the operation of the proposed park and ride will alleviate traffic on other key roads into Reading that were not included within the assessment area. It is therefore likely that more properties are likely to experience an improvement in annual mean NO₂ concentrations as a result of the scheme than were considered in the assessment.
- 3.6.7 Using the DfT's WebTAG guidance in Unit A4.2, it is assumed that the households affected by changes in air quality will be within a 200m radius of links affected by a change in traffic flows. This suggests that 6,009 households across Wokingham and Reading boroughs will directly benefit from improved air quality as a result of reduced traffic and congestion on the local highway network. No households will be affected by a decline in air quality, and the remainder of properties within 200m of the affected links will have a neutral change in air quality.
- 3.6.8 The overall assessment of the impact of the improvements on air quality is provided in **Appendix D**.

Noise

- 3.6.9 Potential noise effects are likely to arise as a result during the construction and operation phases of the Park and Ride scheme. This appraisal considers the noise and vibrations impact of the proposed scheme on the surrounding area.
- 3.6.10 Using the DfT's WebTAG guidance in Unit A4.2, it is assumed that the population affected by changes in noise levels will be within a 200m radius of links affected by a change in traffic flows. This suggests that 13,826 people will benefit from a reduction in noise and vibrations as a result of reduced traffic and congestion. No residents will experience increased noise and vibrations, and the remainder of people within 200m of the affected links will experience no change in noise or vibrations.
- 3.6.11 The overall assessment of the impact of the improvements on noise is **a negligible impact**. The AST in **Appendix C** includes the quantified benefits from the MEC Calculations.

Landscape

- 3.6.12 Landscape in TAG is categorised as a result of the physical and cultural characteristics of the land itself.
- 3.6.13 The impact on the landscape in the immediate vicinity of the proposed development site was assessed considering the pattern, tranquillity, cultural assets, land cover and character of the existing landscape. The overall impact on the landscape has been appraised as **Slightly Adverse**.
- 3.6.14 The landscape assessment concluded that the landscape surrounding the development site is a semi-urban landscape of generally local importance. The dominance of transport corridors and associated infrastructure reduces the tranquillity of the site, which is otherwise surprisingly well screened from surrounding noise and visual pollution. The vegetation and elevated infrastructure elements surrounding the site tends to limit views of the site from the surrounding landscape, thus minimising the potential effects of the proposed development on landscape and visual receptors. Impact on landscape quality through the introduction of additional hard-standing and lighting and the loss of some trees and vegetation will result in adverse effects on the site character although this is likely to affect the immediate surroundings only.

Historical Environment

- 3.6.15 The impact on the surrounding historical environment was appraised to be a **Slight to Moderate Adverse** effect on the setting of a non-designated local heritage asset, and the established historic landscape. However, the potential surface and below ground archaeological resource has not been determined and therefore the impact of the scheme on this element of the historical

environment cannot therefore be adequately determined. There are no designated heritage assets within the site. Three non-designated heritage assets are recorded on the HER. One non-designated local heritage asset (The Dreadnought PH.) has been identified. An Anglo-Saxon cemetery site is recorded as having existed adjacent to the south-eastern corner of the site.

Biodiversity

- 3.6.16 The assessment of the impact of biodiversity considers the impacts of the proposed scheme on biodiversity including the impacts on both local flora and local fauna. The impact of the proposed park and ride on the biodiversity of the immediate area was assessed to be **Slightly Adverse**.
- 3.6.17 The proposed development will result in the loss of a majority of the semi-natural habitat on the site, to include predominantly dense scrub, hedgerows, grassland and scattered trees / plantation woodland. The value of the majority of the habitats on the site are however of low inherent botanical value or ecological distinction, with their value heavily influenced by their location along the River Thames (hence their contribution towards the wider river corridor and connected landscape), and their potential to support protected or notable species. Species which currently utilise the site include slow worm, nesting birds, foraging and commuting bats, with hedgehog, stag beetle and cinnabar moth likely to utilise the site.
- 3.6.18 The proposed development has allowed for the retention of some of the broadleaved woodland, retention of a section of the unimproved calcareous grassland and creation of a habitat connection east – west across the site (broadly parallel to the River Thames) where replacement of habitat on a like for like basis has been proposed. On this basis, the overall value of the site as a connecting habitat can be maintained, provided measures outlined within reporting to avoid effects during construction and operation, associated with for example, lighting and pollution prevention can be adhered to (i.e. provision and implementation of an Environmental Management and Mitigation Plan (EMMP)). Measures have also been provided to enhance the retained / created areas to the benefit of the legally protected, or species of conservation concern known or considerably likely to use the site to the north of the site will be protected and retained through the implementation of the EMMP.

Water Environment

- 3.6.19 The proposed development was assessed to have a neutral impact on the water environment in the surrounding area of the site. It was concluded that the impacts of the proposed park and ride car park on the water environment without mitigation would be negative impacts on water quality and increased flow to the River Thames. However, with the proposed surface water drainage system, these potential negative impacts will be mitigated such that there will be no negative impacts on water quality or increase in flood risk and the overall assessment is **Neutral**.

3.7 ASSESSMENT OF SOCIAL AND DISTRIBUTIONAL IMPACTS

- 3.7.1 There are five social and six distributional aspects of the scheme which should be considered in the social and distributional appraisals, following guidance provided in DfT WebTAG Unit A4. These are:

- à Social
 - < Accidents;
 - < Journey Quality;
 - < Physical Activity;
 - < Security; and

- < Severance.
- à Distributional
 - < Noise
 - < Air Quality
 - < Accidents;
 - < Security;
 - < Severance; and
 - < Strategic Accessibility

- 3.7.2 It was not seen as beneficial to consider physical activity, as the scheme is a public transport scheme that will be accessed by private vehicles and therefore will not generate an increase in walking or cycling.
- 3.7.3 Further information about the appraisal of these impacts can be found in the summary AST and worksheets in **Appendix C and D**. Individual worksheet references are provided below.
- 3.7.4 The Congestion Benefit from the switch of cars to Park and Ride has been calculated from MEC Calculations. These are included in **Appendix B** and on the AST (in **Appendix C**). These benefits are from cars switching to Park and Ride in future years. Traffic growth on the corridor has been calculated used NTEM growth factors also listed in **Appendix B**.

Accidents (Social and Distributional)

- 3.7.5 Analysis of accidents that have occurred on links of the local highway network that are likely to be affected by a change in traffic flow has been undertaken for the latest available four year period (2012 - 2016). The DfT's COBALT software was used to calculate the expected annual accidents based upon the type of link and observed traffic flows.
- 3.7.6 Table 3-3 sets out the following assumptions for each type of Link.

Table 3-3: Summary of Link Assumptions

LINK NO.	LINK NAME	ROAD TYPE	ROAD TYPE DESCRIPTION	LINK LENGTH (KM)	LINK SPEED (MPH)
1	A329 (M)	10 - Modern D2 Roads	Dual carriageway with two lanes in each direction designed to modern standards	0.55	70
2	A4 between A329 (M) and Cemetery Junction	8 - Older S2 A Roads	Single carriageway A Road not designed to modern standards	0.72	30
3	A4 west of Cemetery Junction	8 - Older S2 A Roads	Single carriageway A Road not designed to modern standards	0.66	30
4	A329 between A327 and Cemetery Junction	8 - Older S2 A Roads	Single carriageway A Road not designed to modern standards	0.67	30

- 3.7.7 Table 3-4 shows a summary of the accidents and a comparison of the observed annual accidents with the expected annual accidents from COBALT. The results show that across most links assessed the observed annual accident rate is currently higher than the expected rate from COBALT. This is likely to be a result of high traffic flows and congestion on links in central Reading.

Table 3-4: Summary of Accidents on the Local Highway Network (Baseline)

LINK	OBSERVED NUMBER OF ACCIDENTS (OVER A 4 YEAR PERIOD)	COBALT EXPECTED ANNUAL ACCIDENTS (AVERAGE)	OBSERVED ANNUAL ACCIDENTS (AVERAGE)
L1 - A329 (M)	3	0	1
L2 - A4 between A329 (M) and Cemetery Junction	22	5	6
L3 - A4 west of Cemetery Junction	8	2	2
L4 - A329 between A327 and Cemetery Junction	33	2	8

Table 3-5: Assessment of Accidents with and without Scheme

LINK	EXPECTED ANNUAL ACCIDENTS WITHOUT SCHEME	EXPECTED ANNUAL ACCIDENTS WITH SCHEME
L1 - A329 (M)	0.6	0.7
L2 - A4 between A329 (M) and Cemetery Junction	4.7	4.5
L3 - A4 west of Cemetery Junction	1.7	1.6
L4 - A329 between A327 and Cemetery Junction	6.9	6.5

- 3.7.8 The Park and Ride scheme will encourage car users travelling from the east and Wokingham borough to use the bus for journeys into central Reading from Thames Valley Park. This will reduce the number of private vehicles travelling on the A4 and A329 corridor into and out of central Reading, and the consequent congestion. It is estimated that there will be a reduction of approximately 257 vehicle trips during the opening year.
- 3.7.9 The switch in vehicle from the A4 Corridor to the scheme is forecast to reduce the expected annual accidents, providing a slight beneficial impact.

- 3.7.10 The Park and Ride's overall impact on accidents is seen as **Slightly Beneficial** using the Accidents worksheet included in **Appendix D**, worksheet **D-DIS-3**, as the scheme will reduce the amount of congestion on the corridor between TVP and central Reading, creating a safer environment for all road users.
- 3.7.11 In addition Accident benefits for future years have been calculated using COBALT with results presented in the MEC Calculations in **Appendix B** and on the AST in **Appendix C**

Journey Quality (Social)

- 3.7.12 Journey quality is a measure of the real and perceived physical and social environment that is experienced while travelling. This appraisal takes into account traveller care, traveller's views and traveller stress.
- 3.7.13 Currently the A4/A3290 corridor between Suttons Seeds roundabout and central Reading suffers from severe congestion during peak periods. These delays can be significant and have an adverse impact on travellers' stress and journey quality.
- 3.7.14 The proposed Park and Ride scheme will encourage car users travelling into central Reading at peak times to park their vehicles at TVP and switch to the bus for the final part of their journey. This will reduce the number of vehicles travelling into Reading and the associated congestion. The reduction in delay and congestion will therefore reduce traveller stress and frustration, and reduce the potential for accidents to occur. These factors will provide an improved environment for travellers. The scheme is unlikely to have an impact on the cleanliness of the journey, the available facilities or information, route uncertainty or the travellers' views.
- 3.7.15 The overall impact of the scheme on journey quality can be considered **Slightly Beneficial**, as it will relieve congestion on the A4/A3290 corridor into central Reading during peak periods, improving travellers' environment and reducing the stress and frustration associated with driving in congestion.
- 3.7.16 Further information on the appraisal of these impacts can be found in the worksheet **D-SOC-1** in **Appendix D**.

Physical Activity (Social)

- 3.7.17 Physical activity was not considered relevant for further analysis due to the scheme's focus on public transport improvements which will be accessed using the private car. As such, there is unlikely to be an increase in walking and cycling trips.

Security (Social and Distributional)

- 3.7.18 Changes to transport provision may affect the security of transport users. This impact assessment evaluates the factors which may contribute to a change in the perceived, or real, risk to a user's security.
- 3.7.19 The appraisal assessed the schemes impact on security for bus users and also for users of all motor vehicles. The assessment concluded that the scheme will improve security for bus users in the area across all assessed elements, particularly site perimeters, entrances and exits, formal surveillance, landscaping, lighting and visibility. The use of the site will change from a grassed area to be a bus interchange and car park, with formal and lockable barriers, CCTV and street lighting. This will make the area more secure for both the users and their parked vehicles.
- 3.7.20 A number of different vulnerable groups were analysed as part of the appraisal; women, older people and young people. All were shown to benefit slightly from the improved security. Analysis

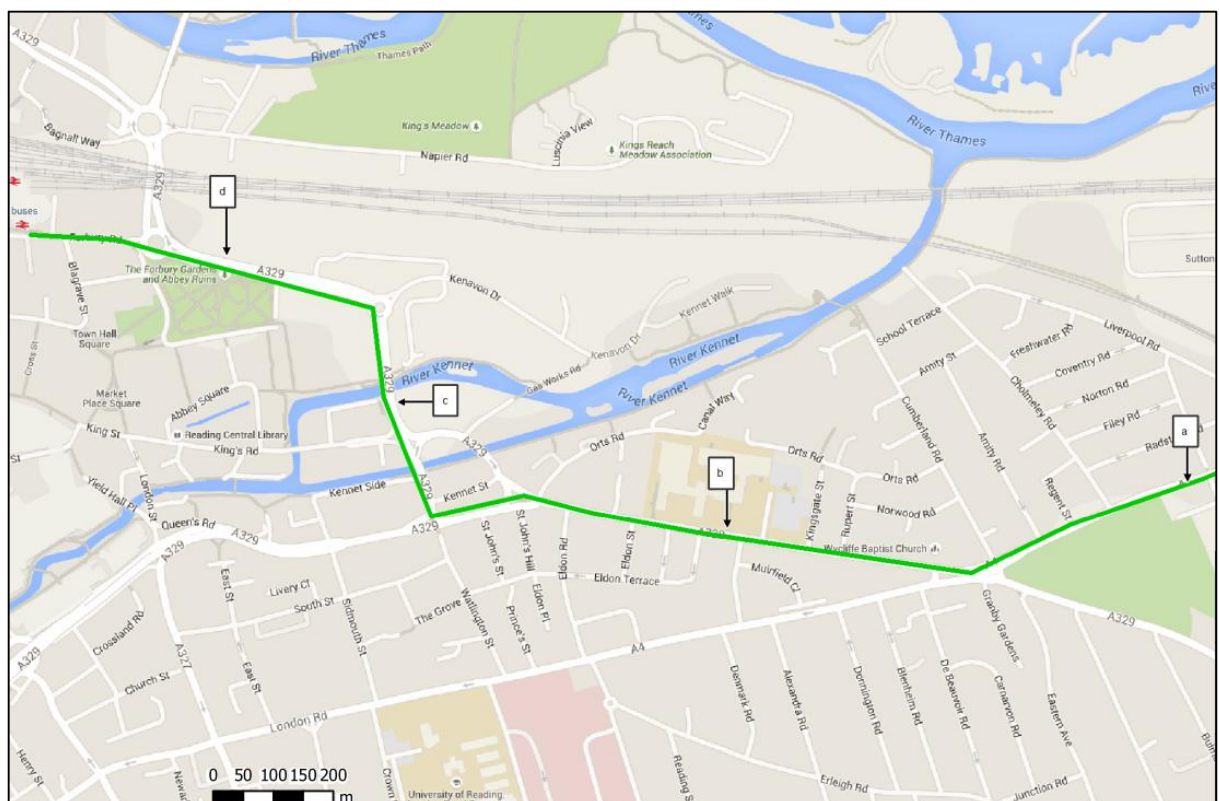
of different transport user groups showed that the improvements to security will moderately benefit bus users (up to 478 users per day) and will have a **Neutral** impact on private car users.

- 3.7.21 There will be no discernible impact for car users on the corridor, as the scheme's security aspects will be focussed on the Park and Ride terminus at TVP. There will not be any changes to infrastructure on the corridor to Reading that will affect car users not using the Park and Ride.
- 3.7.22 Overall, the impact on security is considered to be **Moderately Beneficial**. Further information on the appraisal of these impacts can be found in the worksheets in **Appendix D, D-SOC-2**.

The overall impact on the distributional security of the scheme is **Neutral** due to the relatively low numbers of users affected. Further detail on the appraisal of these impacts is shown in **Appendix D, worksheet D-DIS-4**.

- 3.7.23 Severance (Social and Distributional) Severance relates to the physical separation of residents from facilities and services within their community, caused by transport infrastructure or traffic volumes. This impact assessment evaluates the effect that the change in transport provision resulting from the TVP Park and Ride will have on levels of severance. Four areas, shown on Figure 3-2 below, have been appraised using GIS maps with 400m buffers, and 2011 Census data.

Figure 3-2: Location Plan of Points Assessed for Severance Appraisal



- 3.7.24 There is currently a slight/moderate level of social and distributional severance on the A329/A4 corridor, caused by high volumes of traffic and road layout. There are a number of signalised pedestrian crossings along the length of the road, particularly between Watlington Street and the A329/A4 roundabout. While no additional pedestrian crossings will be provided as part of the proposals, there will be a very slight reduction in traffic volumes as a result of improved accessibility by public transport. However, the reduction is not considered large enough to say

that there will be a slight benefit to severance and as such the change in severance is considered neutral.

- 3.7.25 The overall impact of the Park and Ride scheme on severance can be considered **Neutral**, as the minor reduction in traffic volumes is likely to result in a negligible change in the ability of users to cross the road.
- 3.7.26 Further information on the appraisal of these social and distributional impacts can be found in the worksheets in **Appendix D, D-DIS-5 and D-SOC-3**.

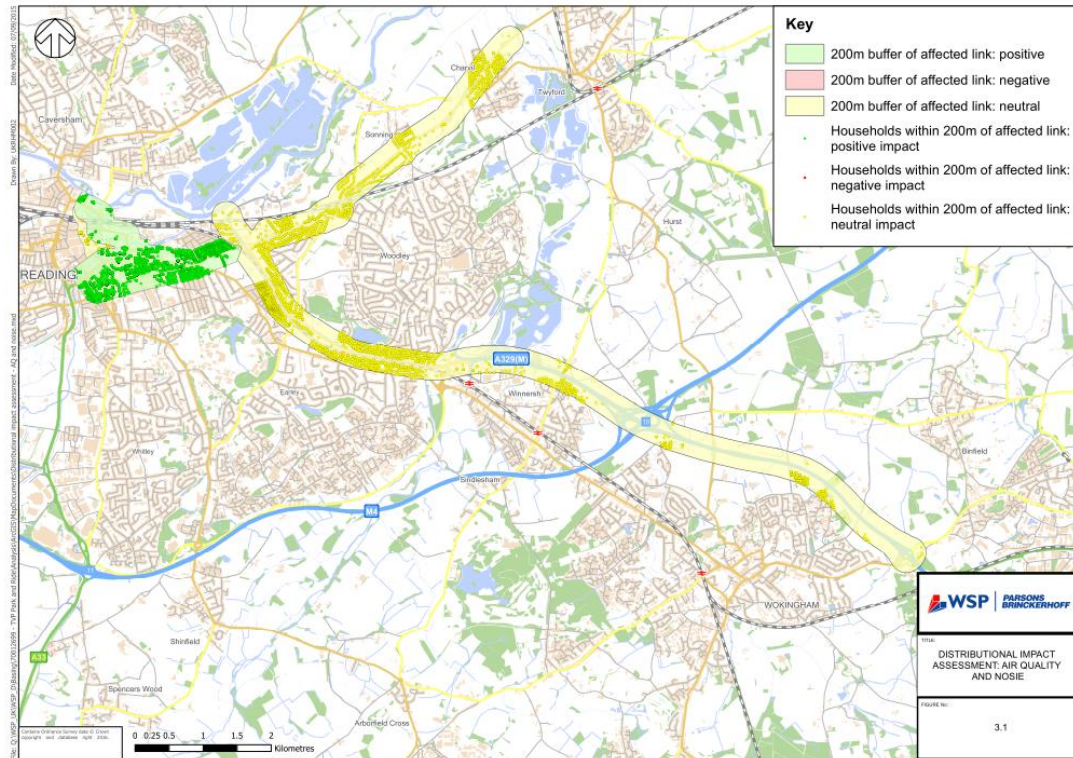
Strategic Accessibility (Distributional)

- 3.7.27 The TVP Park and Ride scheme is referred to in the 'TVB Implementation Plan' and has been prioritised as it will enhance urban connectivity. It assesses the strategic importance of the scheme for accessibility levels in Reading and states that in the TVB Evidence Base document that Reading as a large urban area amounts to 370,000 people which is "certainly large enough to justify significant investment in public transport systems".
- 3.7.28 The baseline assessment shows the public transport isochrones for the existing public transport services. The destination was put as Reading train station. This has then been clipped to cover the same area as the forecast isochrones – the guidance states 'affected links'. It has been assumed that because the public transport service on the corridor between the Park and Ride and Reading station will not change, it is not 'affected' and have therefore not included it.
- 3.7.29 The proposed park and ride scheme was also assessed in terms of its distributional impact on accessibility. The assessment of distributional impacts was undertaken for people of differing ages, genders and disabled people. The overall accessibility score for the proposed TVP Park and Ride was assessed as **Moderately Beneficial**. Further information on the appraisal can be found in the worksheets in **Appendix D, D-DIS-6**.

Noise and Air Quality (Distributional)

- 3.7.30 Based on the provided road traffic data applicable to the "Do Minimum" and "Do Something" scenario for the proposed scheme, the associated change in road traffic noise are expected to be less than 1dB on affected links. Changes of this magnitude are considered to be insignificant. On this basis the Park and Ride has been assessed as **Slight Beneficial**.
- 3.7.31 The Air Quality study area encompasses an Air Quality Management Area which has been declared for the exceedance of annual mean NO₂ objective level along key arterial routes into Reading. The proposed route will alleviate traffic along these routes, thereby improving pollution levels.
- 3.7.32 Overall, a decrease in overall exposure to NO₂ and PM₁₀ concentrations are predicted. No properties are predicted to experience a deterioration of Air Quality
- 3.7.33 The overall impact on the scheme was assessed as **Slight Beneficial**.
- 3.7.34 The areas included in the assessment are shown in Figure 3-3.

Figure 3-3: Distributional Impact Assessment Air Quality and Noise



3.7.35 Further information is provided in **Appendix D, D-DIS-1** and **D-DIS-2**.

3.8 MONETISED COSTS AND BENEFITS

VALUE FOR MONEY

Table 3-6: Analysis of Monetised Costs and Benefits (AMCB)

ITEM	VALUE (£000S)
Noise	16.7
Local Air Quality	26.5
Greenhouse Gases	47.7
Accidents	1,596.2
Decongestion Benefit (Commuter and Business Travel)	3,093.9
Private Sector Revenue (from 2026)	1,022.1
Wider Public Finances (Indirect Tax Revenues)	-205.0
Developer Contributions	-550.0
Present Value of Benefits (PVB) *	5,058.2
Broad Transport Budget	1,568.2
Present Value of Costs (PVC)	1,568.2
OVERALL IMPACTS	
Net Present Value (NPV)	3,490.0
Benefit to Cost Ratio (BCR)	3.23

* PVB also includes Infrastructure benefit £10,005.

- 3.8.1 Full AMCB, Public Accounts and TEE Tables are provided in **Appendix D**.
- 3.8.2 All benefits listed above are from MEC Calculations (**Appendix B**), with the exception of Local Air Quality and Accidents. Local Air Quality benefits are taken from the model described in **Appendix D-ENV-1**. Accident benefits are taken from COBALT calculations based on traffic growth forecasts (**Appendix B**) and link assumptions (Table 3-2).
- 3.8.3 The Present Value Benefits for the Core Scenario are forecast to be £5,058,184 leading to a BCR of **3.23**.
- 3.8.4 A second Low Demand Scenario has been calculated, which applies a 20% reduction to forecast demand and therefore a slightly higher Broad Transport Budget. In this scenario Present Value Benefits are forecast to be £4,295,047 and the BCR is forecast to be 2.44. The calculations for this scenario are also included in **Appendix B**.
- 3.8.5 In addition to the monetary benefits identified above the proposed scheme will have the additional benefit of financially supporting the existing TVP Shuttle Bus which provides a valuable link between TVP Business Park and Reading Town Centre and Rail Station. TVP Business Park, being one of the Reading and Wokingham area's main business destinations.

4 FINANCIAL CASE

4.1 INTRODUCTION

4.1.1 This section presents the Financial Case for the TVP Park and Ride scheme. It concentrates on the costs and any funding cover associated with the scheme. The DfT's guidance document, 'The Transport Business Cases' outlines the areas that should be covered as part of the Transport Business Case documentation. In accordance with this, this chapter provides details about the necessary elements required to achieve compliance in the Financial Case. These are:

- à The scheme's anticipated costs; and
- à Details of the budgets and funding cover.

4.2 COST ESTIMATES

4.2.1 The estimated anticipated cost of the total scheme is £3.6m (2019 prices) and the breakdown of the costs of the scheme are set out in Table 4-1 below.

Table 4-1: Breakdown of Costs

COST ITEM	COST (£)
Preparation costs (including earthworks)	£1.4m
Construction costs (including construction of access road and parking area)	£2.2m
Total	£3.6m

4.2.2 The preparation costs have been calculated by estimated the amount of earth that will need to be removed and the length of retaining wall expected to be required.

4.2.3 The construction costs have been calculated based on the tender prices for relevant recent schemes, namely Wokingham Station Link Road and Winnersh Triangle Park and Ride.

4.2.4 Details are provided in **Appendix B** of the cost estimates used. The cost estimates were calculated in different years so were re-based to 2010 before having the following applied:

- 1) 10% allowance for design and project management.
- 2) QRA (50) – as calculated in Section 6.10.
- 3) Optimism Bias – 15%.

4.2.5 Maintenance and renewal costs are to be covered by the Park and Ride charge.

4.3 ANTICIPATED SPEND PROFILE

4.3.1 The anticipated spend profile has been determined by the Project Board in consultation with the project group. The profile is given in Table 4-2 below.

Table 4-2: Quantified Cost Estimate (£m, outturn)

ORGANISATION	YEAR COST ARE INCURRED (£MILLIONS)					TOTAL
	16 / 17	17 / 18	18 / 19	19 / 20	20 / 21	
Detailed Design		£250,000				£250,000
Preparation and Construction			£2,450,000	£900,000		£3,350,000
Total Cost		£250,000	£2,450,000	£900,000		£3,600,000

4.4 FUNDING PACKAGE

- 4.4.1 The anticipated contribution from the Local Enterprise Partnership was previously set out by Wokingham Borough Council as £2.9 million with the overall scheme cost being £3.6 million (2019 prices). Developer Contributions will be from CIL.

Table 4-3: Funding Package (£m)

ORGANISATION	YEAR COST ARE INCURRED (£MILLIONS)					TOTAL
	16 / 17	17 / 18	18 / 19	19 / 20	20 / 21	
LEP Local Growth Deal			£1,750,000	£900,000		£2,900,000
Local Contribution (via CIL)		£250,000	£450,000			£700,000
Total Cost		£250,000	£2,450,000	£900,000		£3,600,000

5 COMMERCIAL CASE

5.1 INTRODUCTION

5.1.1 The Department for Transport's guidance called 'The Transport Business Case: Commercial Case' outlines the areas that should be covered as part of the Transport Business case documentation. The necessary elements required in the Commercial Case to achieve compliance are:

- à Output based specification;
- à Procurement strategy;
- à Sourcing Options;
- à Payment mechanisms;
- à Pricing framework and charging mechanisms;
- à Risk allocation and transfer;
- à Contract length; and
- à Contract management.

5.1.2 The Commercial Case has been developed following the outline set out below;

- à Set the procurement objectives, outcomes and constraints;
- à Identify potential procurement/purchasing options;
- à Assess the procurement options in terms of pros and cons, as a rationale for selecting the preferred sourcing option;
- à Confirm the preferred payment mechanism and pricing framework; and
- à Assess how different types of risk might be apportioned / shared, with risks allocated to the party best placed to manage them.

5.1.3 To achieve compliance the necessary elements are explained below.

5.2 OUTPUT BASED SPECIFICATION

5.2.1 The Commercial Case is based on strategic outcomes and outputs, against which alternative procurement options are assessed.

5.2.2 The outcomes which the procurement strategy must deliver are to:

- à Achieve cost certainty, or certainty that the scheme can be delivered within the available funding constraints;
- à Minimise further preparation costs with respect to scheme design by ensuring best value, and appropriate quality;
- à Obtain contractor experience and input to the construction programme to ensure the implementation programme is robust and achievable; and
- à Obtain contractor input to risk management and appraisals, including mitigation measures, to capitalise at an early stage on opportunities to reduce construction risk and improve out-turn

certainty, thereby reducing risks to a level that is 'As Low as Reasonably Practicable' (HSE, Risk Management).

5.3 PROCUREMENT STRATEGY

5.3.1 Wokingham Borough Council will be responsible for procurement in relation to the delivery of their element of the Thames Valley Park and Ride. The Procurement Strategy currently is to use existing contract arrangements Wokingham Borough Council has with their term contractor.

5.4 SOURCING OPTIONS

5.4.1 Wokingham Borough Council has a designated delivery team. Where procurement is required, this will follow protocol as defined above. The project team will agree the best approach for sourcing and procurement of these elements.

5.5 PAYMENT MECHANISMS, PRICING FRAMEWORK AND CHARGING MECHANISMS

5.5.1 Task orders based on a fixed or target price arrangement will be awarded based on the NEC 3 contract model.

5.6 RISK ALLOCATION AND TRANSFER

5.6.1 Contracts will be awarded via processes set out in Section 6.3 ensuring quality and competitive pricing. The contract will be based on a schedule of rates, rather than a fixed price and will include a reasonable contingency to cover unforeseen issues. Experience has shown that this approach is the most cost effective, since a fixed price quotation would result in the contractor submitting a considerably higher price in order to cover their risk. The authority and support authorities have experience dealing with large procurement and construction contracts, and will work towards minimising risk through the contract process.

5.6.2 Wokingham Borough Council has experience working on major schemes with large budgets including Wokingham Station Link Road and Coppid Beech Junction Improvements, as well as in-house experience to manage construction and/or contracts. There is confidence that all aspects of contractual and commercial arrangements can be determined before works are implemented resulting in the scheme delivered to plan.

RISK MANAGEMENT PLAN

- 5.6.3 A Risk Management Plan will be developed throughout the life of the project. Following confirmation of scheme funding, ownership of the risks will be allocated to those parties best able to manage them.
- 5.6.4 The Risk Management Plan will set out the full risk management process and responsibilities for undertaking risk management to deliver the TVP Park and Ride Scheme. Implementation of a structured, forward looking and continuous risk and opportunity management process is intended to increase the certainty of cost-effective scheme delivery and operational success.
- 5.6.5 Further risk identification will be carried out in numerous ways such as:
- à Workshops;
 - à Reviews
 - à Meetings; and
 - à Day to day operation.
- 5.6.6 When a risk is identified, the data will be added to the risk register.

RISK MANAGEMENT ORGANISATION

- 5.6.7 The risk management organisation for this scheme consists of the Project Board and the Risk Owner. Wokingham Borough Council will act as Project Sponsor. This role will lead the Project Board and report directly to the Berkshire Strategic Transport Forum.
- 5.6.8 The Project Board has overall responsibility for ensuring sufficient resources are available to manage risks across the scheme. Risks shall be allocated and managed in a cost effective manner by the most appropriate party to do this and at the appropriate level. The Project Board shall be primarily concerned with managing strategic level risks relating to interfaces between the scheme and the wider project environment.
- 5.6.9 The Project Manager has overall responsibility for ensuring that the risk management process is implemented and managed in accordance with strategies. The Project Manager shall ensure that risks are actively managed in a consistent and appropriate manner across all work streams in accordance with this Plan. All severe risks shall be reported to the Project Board through the Project Manager. In addition, all risks which relate to the overall direction, organisation and control of the scheme, e.g. loss of key project staff, shall be reported to the Project Board.
- 5.6.10 The Project Manager shall:
- à ensure that an appropriate procedural framework is adopted;
 - à report to the Developers Project Manager in review and management of project performance;
 - à agree the required level of risk management support to be provided for risk identification, analysis, review and reporting;
 - à facilitate risk workshops/meetings as appropriate supported by a risk co-ordinator if required; and
 - à be the custodian of the risk register and the contained data.

- 5.6.11 The Risk Owner shall be responsible for the day to day management of the risk(s) that they own. The selection and appointment (by Project Manager) of a risk owner will be on a “best person for the task” approach and, once appointed, the risk owner will monitor and update the risk register informing the risk manager of changes.

KEY PROJECT RISKS

- 5.6.12 Table 5-1: Key Project Risks identifies the key project risks throughout the planning and implementation of the scheme. A full risk register can be found in **Appendix E**.

Table 5-1: Key Project Risks

RISK	MITIGATION
PLANNING / APPROVAL RISKS AND MITIGATION	
Failure to achieve planning	Early discussions with Planning authorities and statutory bodies
COST RISKS AND MITIGATION	
Allocated budget does not cover the cost to design and implement the scheme	Capital programme allocation within the council should be used to supplement delivery where possible
Statutory Utilities in existing verges and road areas	Early C2 collation and adjustment to design as required plus C3 stats design processes
Lack of topographical information	Check and update current land survey information for the park and ride site and organise any missing or commission new surveys
Poor accuracy of cost estimates	Ongoing review of costs during preliminary and detailed design work and negotiations with Term Contractor known contract rates from
DELIVERY RISKS AND MITIGATION	
Lack of commitment from Elected Members and senior officers	Detailed consultation during project to ensure support
Co-ordination and agreement issues across authorities	Close working with partners, regular meetings on details going forward, agreed governance arrangements in place
Opposition from key stakeholders	Early consultation exercises and continued consultation with key stakeholders
Failure to agree on technical design issues	Internal discussions between various authority technical officers with input from modelling work. Road safety audits will be needed on detailed design
Impact of temporary TM restrictions greater than expected	Early involvement with Technical Officers, discussions with Emergency Services, detailed TM plans when contractor in place
Lack of co-ordination with other highway works	Early discussions over highway access arrangements and section 50 notices. Road space booking as early as possible.
Unforeseen ecological sensitivities	Environmental Feasibility study undertaken

5.7 CONTRACT LENGTH AND CONTRACT MANAGEMENT

- 5.7.1 Wokingham Borough Council has their own delivery agents to implement schemes and, as such, contracts will be managed in accordance with their existing protocol.

6 MANAGEMENT CASE

6.1 INTRODUCTION

6.1.1 The DFT's guidance document, 'The Transport Business Cases' outlines the areas that should be covered as part of the Transport Business Case documentation. The necessary elements required in the Management Case to achieve compliance are:

- à Programme and project dependencies;
- à Governance;
- à Communications and stakeholder management;
- à Risk management strategy;
- à Contract management; and
- à Monitoring and evaluation.

6.1.2 The management approach has been developed following the outline set out below:

- à Set the appropriate governance structure to ensure outcomes and objectives are met;
- à Identify and plan for the key approval milestones ensuring information is provided in good time so as to not delay the programme; and
- à Assess how the delivery process will be managed to achieve the optimum financial and impact performance.

6.2 EVIDENCE OF SIMILAR PROJECTS

6.2.1 Two other park and ride schemes have been recently implemented in the Reading urban area including the Mere oak Park and Ride on the A33 and the Winnersh Triangle Park and Ride on Wharfedale Road, both opening in 2015.

6.2.2 These schemes were funded through Local Sustainable Transport Fund and implemented and delivered by Reading BC and Wokingham BC working in partnership.

6.3 PROGRAMME AND PROJECT DEPENDENCIES

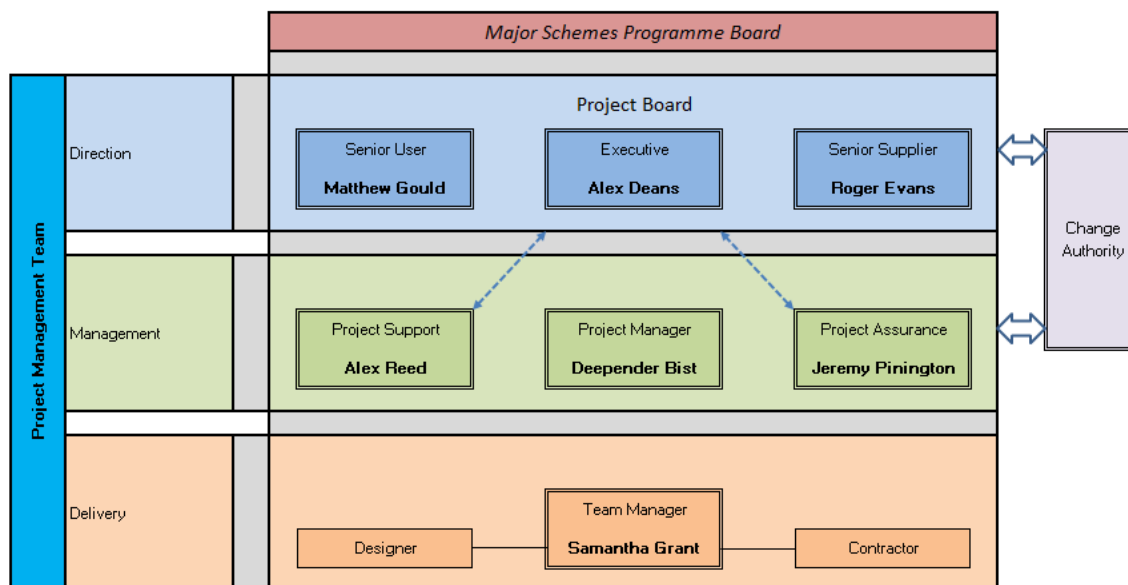
6.3.1 Further detailed design work is required for the route, so a detailed project programme is not yet available. Table 6-1 provides an indicative project plan.

Table 6-1: TVP Park and Ride Indicative Project Plan

Key Task	Quarter and Year							
	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019
Stakeholder liaison	Complete							
Full Business Case ready for submission to independent assessor								
Consideration at Board								
Detailed design works and planning where required								
Procurement								
Start of construction								
Completion of construction								

6.4 GOVERNANCE, ORGANISATIONAL STRUCTURE AND ROLES

- 6.4.1 As promoter of the scheme, Wokingham Borough Council will be responsible for the overall project management. A key element of the function will be to share data with TVB LEP and Reading Borough Council in a timely and comprehensive manner.
- 6.4.2 WBC will adopt PRINCE2 principles, themes and processes to provide assurances that the project time, cost and quality constraints are effectively managed and controlled.
- 6.4.3 The organisational structure and roles will be:



6.5 ASSURANCE AND APPROVALS PLAN

- 6.5.1 It is expected that a “Gateway Process” will be used as the mechanism for assessing the project at critical stages in its lifecycle prior to commencing the next stage. The use of the Gateway process enables:
- à Realistic and achievable targets to ensure successful delivery;
 - à Deployment of relevant skills and competencies to a project;
 - à Compliance with best practice;
 - à Key stakeholder input and understanding
 - à Project feedback through lessons learnt; and
 - à A visible audit trail.
- 6.5.2 These milestones will be built into the project programme and will be monitored by the Project Manager and reported to the Project Board.

6.6 COMMUNICATIONS AND STAKEHOLDER MANAGEMENT

- 6.6.1 The key objectives of the scheme’s stakeholder management are to:
- à Keep stakeholders aware of the scheme’s development and progress;

- à Meet statutory requirements (such as Environment Agency consents);
- à Increase public and stakeholder awareness of the scheme through local publicity, website etc; and
- à Provide information and support to those affected by the scheme during construction and operation.

6.6.2 The Project Board will ensure a programme of regular meetings take place with the contractors and designers, to ensure that the project is on target.

6.6.3 An overarching communications strategy will be developed and managed by the Project Board,. This will ensure a co-ordinated approach to communicating with and managing stakeholders. The strategy will include ongoing regular meetings with relevant internal and external stakeholders.

6.7 PROGRAMME / PROJECT REPORTING

6.7.1 Responsibility for accurate, timely and appropriate communications within the project team rests with the Project Board. Nominated officials/Project Managers have a responsibility to provide this information when required. The Project Board will then ensure that this information is reported to the Berkshire Strategic Transport Forum and Thames Valley LEP through scheduled meetings.

6.7.2 The Project Board is responsible for keeping the Lead Members aware of the development of the scheme towards meeting the project objectives.

6.7.3 It is the responsibility of the nominated officials to ensure that the Project Board has sufficient information and is involved in all decisions that affect performance of the project, achievement of the project objectives or deviation from agreed and delegated responsibilities.

6.8 KEY ISSUES FOR IMPLEMENTATION

6.8.1 The live risk register contains a full set of identified risk associated with the implementation of the scheme along with planned mitigation.

6.8.2 Table 5.1 in the Commercial Case identifies the key project risks throughout the planning and implementation of the scheme,

6.9 CONTRACT MANAGEMENT

6.9.1 Wokingham Borough Council will be responsible for procurement and contract management.

6.10 RISK MANAGEMENT STRATEGY

- 6.10.1 A risk register has been developed, containing all the risks associated with the scheme. The risk register is provided in Appendix E
- 6.10.2 Each risk identified has been assessed in qualitative terms (low, medium, high), given the below impact x probability matrix. It provides a forecast probability of each risk occurring and defines a range of probable costs which may be incurred if the risk materialises.

Impact	>£250k	VH	5	5	10	15	20	25
	£125k-£250k	H	4	4	8	12	16	20
	£63k-£125k	M	3	3	6	9	12	15
	£31k-£63k	L	2	2	4	6	8	10
	<£31k	VL	1	1	2	3	4	5
				1	2	3	4	5
				Very Unlikely	Unlikely	Fairly Likely	Likely	Very Likely
				<5%	5%-10%	10%-30%	30%-60%	>60%
				Probability				

- 6.10.3 This assessment has also enabled the development of a quantitative risk model to understand the overall cost risk exposure of the scheme based on the key risks identified to date.
- 6.10.4 A Monte Carlo simulation has been undertaken, and cumulative distribution or forecast risk has been prepared. From this distribution a mean value has been extracted for addition to the costs of appraisal and the P(80) value has been assessed for the outturn cost calculation for the financial assessment.
- 6.10.5 The forecast risk values are provided in Table 6-2 below and the cumulative distribution graphs are included in Appendix E

Table 6-2: P (50) and P(80) Values for Thames Valley Park and Ride

	PRE-MITIGATION	POST-MITIGATION
P(50)	£1,714,417	£242,062
P(80)	£2,876,353	£523,118

- 6.10.6 The key drivers of the above risk exposure are highlighted below (refer to the risk register for details on the risks and mitigation actions identified):
- Land required currently in Oracle ownership (Risk ID 1.1);

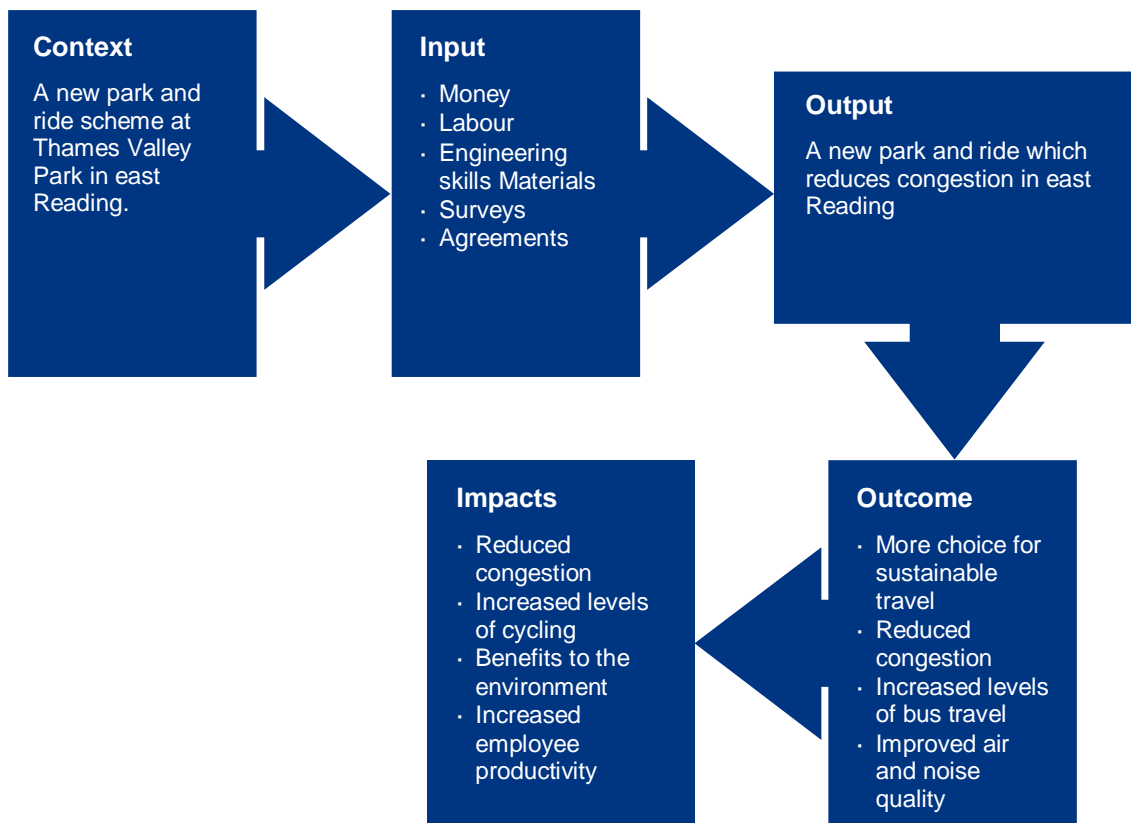
- SGN Gas Main obstructing construction (Risk ID 1.4);
- TVP Directors not allowing use of TVP Shuttle (Risk ID 1.5); and
- SSE works on overhead power lines - potential cost savings missed or design conflicts (Risk ID 1.6)

6.11 BENEFITS REALISATION PLAN

- 6.11.1 Tracking of the scheme benefits will be a key element to understand the successes. These benefits will be linked to the monitoring and evaluation plan.
- 6.11.2 The project working group will be responsible for the realisation of the benefits associated with the proposed improvements. The benefits realisation strategy (to be approved by the project Steering Group) is formed of the following components:
- à The identification of tangible and intangible benefits arising from the improvements;
 - à Establishing the baseline and measuring the benefits against the baseline;
 - à A timeline identifying the relevant measurements and reporting points;
 - à Reporting and governance structure associated with benefits realisation; and
 - à Post project review and evaluation.

6.12 MONITORING AND EVALUATION

- 6.12.1 Monitoring and evaluation is key to be able to accurately measure the success of a project. An intervention logic map is an important way to create a systematic pathway for a scheme. Figure 6.2 is a logic map with examples of components relatable to the Thames Valley Park and Ride Scheme.
- 6.12.2 To monitor the impact of the Park and Ride, post scheme completion surveys will be undertaken to establish the change in traffic flows and whether there has been any improvement to traffic flows as anticipated in the modelling. This will be reported to the participating councils to inform future projects.



6.13 CONTINGENCY PLAN

- 6.13.1 Contingency planning forms part of the risk register, and are reviewed by the Project Manager and their design team (and reviewed by the Project Board).

7 CONCLUSIONS

- 7.1.1 The Thames Valley Park Park and Ride will provide 277 car parking spaces and provide an alternative travel choice for residents around the Wokingham borough to access Reading town centre by the A4 London Road. The site can be served by an existing shuttle bus service provided by TVP between the business park and Reading town centre.
- 7.1.2 Economic, distributional, environmental and social appraisals have been conducted in accordance with the Department for Transport's (DfT) WebTAG guidance. These appraisals consider the impacts associated with the highways schemes proposed. The strategic, commercial, financial and management cases of the scheme have also been considered in this report.
- 7.1.3 The value for money assessment has been prepared in accordance with the DfT's 'Value for money assessment: advice note for local transport decision makers'.
- 7.1.4 As detailed in Table 7-1 there are benefits of £5,058,184 (PVB) with costs of £1,568,187 (PVC) giving a BCR of **3.23** (*n.b. all monetary values have been discounted to 2010*). This represents the benefits for the core elements of the scheme, and is considered high value for money according to DfT guidance.

Table 7.1 Analysis of Monetised Costs and Benefits (AMCB)

ITEM	VALUE (£000S)
Noise	16.7
Local Air Quality	26.5
Greenhouse Gases	47.7
Accidents	1,596.2
Decongestion Benefit (Commuter and Business Travel)	3,093.9
Private Sector Revenue (from 2026)	1,022.1
Wider Public Finances (Indirect Tax Revenues)	-205.0
Developer Contributions	-550.0
Present Value of Benefits (PVB) *	5,058.2
Broad Transport Budget	1,568.2
Present Value of Costs (PVC)	1,568.2

OVERALL IMPACTS	
ITEM	VALUE (£000s)
Net Present Value (NPV)	3,490.0
Benefit to Cost Ratio (BCR)	3.23

* PVB also includes Infrastructure benefit £10,005.

- 7.1.5 The BCR for the economic case is **3.23**.
- 7.1.6 In addition to the monetary benefits identified above the proposed scheme will have the additional benefit of financially supporting the existing TVP Shuttle Bus which provides a valuable link between TVP Business Park and Reading Town Centre and Rail Station. TVP Business Park, being one of the Reading area's main business destinations. The scheme also meets the Strategic Policy objectives for the Reading and Wokingham area.
- 7.1.7 Extensive work has been undertaken to ensure that the mechanisms for delivering the scheme are in place, and that the scheme is overseen by a Project Board. The key milestones of the project following the submission of this Transport Business Case are:
- à Conditional approval sought from Thames Valley Berkshire Local Enterprise Partnership (LEP): July 2017
 - à Tendering process date: to follow planning consent, with construction due to commence after that.
- 7.1.8 The total scheme cost, on which this Business Case is based, is £3.6million (2019 prices). The Thames Valley LEP contribution is requested to be £2.9 million.

Appendix A

SCHEME LAYOUT

Appendix B

LOGIT MODEL AND MEC CALCULATIONS

Appendix C

APPRAISAL SUMMARY TABLE

Appendix D

WORKSHEETS

Appendix E

QUANTIFIED RISK ASSESSMENT