



Wokingham Borough Council

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# WINNERSH TRIANGLE SCHEMES

Business Case Addendum: Parking Deck





Wokingham Borough Council

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Business Case Addendum: Parking Deck

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APPENDIX A  
TEE, PA AND AMCB

# 1 INTRODUCTION

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- 1.1.1. Further to submitting a full business case to the Thames Valley Berkshire Local Enterprise Partnership (TVB LEP) in March 2019, Wokingham Borough Council (WBC) were successful in securing LEP funding to develop a circa 130 space single deck car park, over the existing Winnersh Triangle surface Park and Ride car park, interior refurbishment of the station building, as well as some limited improvements to the pedestrian amenities at the station forecourt.
- 1.1.2. Since the FBC was submitted in March 2019, the scope of the car parking improvements and overall works at the station has changed significantly. Currently, there are many new elements to the scheme, some of which will generate additional benefits, whereas others are fundamental to the successful design and delivery of the original scheme but were not identified during the business case submission due to the lack of design maturity at the time.
- 1.1.3. Whilst the parking deck scheme has broadly remained the same as before, Frasers Property, the owners of the adjacent business park have come forward to promote a public urban realm scheme around the station forecourt. The access arrangements and the existing station turning head will need to be modified to facilitate the urban realm improvements. Frasers Property will fully bear the cost of the urban realm improvements, and also half the cost of the revised station access and turning head. These elements were not included within the original business case submission in 2019.
- 1.1.4. The planning application for the Winnersh Triangle Schemes was submitted to Wokingham Borough Council on 2 April 2020 and the scheme is currently undergoing public consultation in order to fulfil the planning requirements. A decision on the application is expected in the first week of July 2020.
- 1.1.5. This addendum has been prepared to support the additional funding request, specifically for the car park element of the Winnersh Triangle Schemes. Separately, a second addendum has been prepared to capture the additional funding request sought for the revised station access and turning head.

## 2 SCOPE OF WORKS

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- 2.1.1. Since the original scheme specification in the March 2019 FBC, a number of additional elements have been put forward, combined with more up to date / more detailed estimates of the 'base' scheme costs. The overall specification for the scheme now includes the following.
- Replacing the existing Sustainable Drainage System (SuDS) with a new drainage system that is compatible with the drainage requirements of the car park.
  - Provision of 8 active and 36 passive Electric Vehicle (EV) charging points and associated equipment at the facility, including the provision of a new transformer. This is to comply with updated planning requirements.
  - A lift between the first floor and the ground floor of the car park.
  - Requirement for significant statutory undertaker's work.
  - Change of design strategy from design and build to upfront detailed design work, in parallel to the preliminary design, in order to allow better cost certainty during the tender stage, especially for the below-ground works.
- 2.1.2. The cost estimates for the original business case were based on a design that was produced by a specialist deck supplier following a site visit and their extensive experience of designing and implementing similar car parks across the UK. However, during the preliminary design stage, WBC requested that the detailed design of the parking deck should be undertaken in parallel to the preliminary design, in order to fully understand the ground conditions and to achieve a degree of design maturity that would mitigate cost uncertainty during the tender stage. Based on extensive site investigations undertaken over the past few months, including topographical survey, Ground Penetration Radar survey, geotechnical investigations and trial pits, various site-specific constraints have come to light that were previously unknown, with ensuing cost implications. Some of these constraints were not foreseen within the risk component of the cost.
- 2.1.3. The provision of a lift connecting the ground floor and the deck was not included within the original parking deck specification. The requirement for a lift has evolved through discussions with various stakeholders within the Council. The provision of a lift will benefit parents with buggies, concessionaires, who form 10% of the Park and Ride patrons, and those with disabilities. The provision of a lift will help the Council meet their obligations under the Equality Act 2010.
- 2.1.4. Cost of electric equipment has also escalated due to the inclusion of additional electric vehicle charging infrastructure, which is a planning requirement now placed on all new planning applications since the original business case was submitted. This has necessitated the requirement for a new higher capacity transformer and the substantial installation costs charged by the relevant Distribution Network Operator.
- 2.1.5. To achieve the carbon-neutral target and in line with their declaration of a Climate Emergency, the Council are committed to incorporating renewables such as PV panels on all new developments. Therefore, as well as these additional items, new solar photo voltaic (PV) panels on a roof canopy, over the central section of the parking deck, are also likely to form part of the enhanced scheme. These will enable the enhanced facility to generate electricity for a variety of on-site purposes, including as electric vehicle charging points. The cost of a roof canopy incorporating the PV panels themselves will be borne by WBC, and its provision is therefore subject to a successful internal funding application by WBC. It should be noted that the provision of the PV canopies has not been

included within this addendum as this element (which would be entirely funded by WBC if it were to go ahead) is not yet certain to proceed. If the funding for the PV panels is not immediately forthcoming, its potential provision would still need to be future-proofed within the parking deck design.

- 2.1.6. The preliminary design of the parking deck drainage system has revealed that the existing Sustainable Urban Drainage System (SuDS) system is not solely adequate or fully compatible with the drainage and attenuation requirements of the deck. Significant design modifications will be required, including the provision of additional attenuation tanks, to meet the drainage requirements of the deck as well as to increase the attenuation for climate change. These modifications are required to enhance the resilience of the existing system. A significant proportion of the increased scheme cost could be attributed to the modification of the SuDS.
- 2.1.7. Although the scheme is located within Flood Zone 2, the flood risk for the development itself is limited by the nature of the scheme by virtue of the parking deck being raised from the ground. However, certain components of the parking deck including access ramps, proposed plant rooms, lift, power substation and the above-ground attenuation tanks have the potential to block or alter the natural flooding mechanisms within the floodplain. Appropriate mitigation measures, which were not envisaged at the time of the original business case, have had to be embedded into the scheme, including the positioning of the attenuation tanks and electric substation on stilts and moving the plant rooms to the deck. These design modifications have also had an impact on the scheme costs.
- 2.1.8. One of the schemes considered under the original business case included improvements to the station building interior by revamping the passenger waiting area and ticketing office. Due to the increase in the scope of work envisaged for the proposed parking deck, and the ensuing cost uplift, it has now been decided to exclude the costs of station improvement works, which is anticipated to realise only modest economic benefits over the assessment period, from the current funding application.
- 2.1.9. The original business case also considered minor improvements to the pedestrian amenities in the station forecourt area by moving dropped kerbs and tactile paving to a better location, as well as improving access between the park and ride bus shelter and footbridge. This has now been superseded by the revised station access and urban realm improvements scheme which is covered within the second addendum to the business case.



### 3 STRATEGIC CASE

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- 3.1.1. The strategic case for the parking deck is comprehensively outlined within the Winnersh Triangle Business Case. A brief summary of the key points, including the strategic benefits of the additional elements, is set below.
- 3.1.2. With road traffic congestion into the centre of Reading already at unsustainably high levels (and worsening if no intervention takes place), the new parking deck and the additional spaces will increase the capacity of the park and ride facility and will allow higher numbers of drivers to park here and use rail and bus services into Reading (as well as other locations in this busy corridor). Doing nothing at Winnersh Triangle station will mean that drivers are not offered an attractive, alternative means of transport and are therefore likely to remain in their cars rather than switch to an enhanced park and ride facility. Congestion relief will also mean that journey time reliability for commuters and other road users will be improved.
- 3.1.3. In its present form and with restricted parking capacity, the station cannot fulfil its potential both as a gateway to the local area and as a much-improved park and ride facility.
- 3.1.4. Doing nothing will mean that harmful vehicle emissions and high levels of noise associated with congested traffic conditions will continue (and will worsen as traffic levels increase).
- 3.1.5. The enhanced car park design will include spaces and charging points for electric vehicles which will help reduce the emissions that contribute to climate change. This will encourage increased use of electric vehicles given that the availability of charging points is a major consideration when the purchase of electric vehicles is being considered.
- 3.1.6. Given that WBC have declared a “climate emergency”, the scheme will demonstrate the steps the Council is taking to reduce adverse environmental impacts and improve public health in the area, and to make the council carbon neutral by 2030. If the “do nothing” option is pursued, these will not be put in place and it will not be possible to meet one of the strategic objectives in the area, i.e. promoting more sustainable, environmentally friendly transport options.
- 3.1.7. To achieve the carbon-neutral target, the council is committed to incorporating renewables such as PV panels on all new developments. With the intention to now install solar PV panels at the enhanced car park, vehicle emissions will be reduced further as EVs will be charged with electricity generated by PV panels at Winnersh Triangle.
- 3.1.8. A range of new features at the station will benefit users and the local community. These include a new car park lift with step-free access and additional disabled parking. These, combined with the other enhancements, will greatly improve access and travel options for those who are either disabled or have some form of mobility impairment. These align well with many local and regional objectives and will help those who are disabled have access to a much wider range of opportunities.
- 3.1.9. The requirement for all LEPs to develop Local Industrial Strategies (LIS) for their respective geographical remit was set out by the Government in their Industrial Strategy White Paper, published in November 2017. The overarching aims of the White Paper are to a) improve UK’s overall productivity performance and b) ensure that future economic growth is inclusive. Thames Valley Berkshire LEP is among the third wave of Local Enterprise Partnerships spearheading the next round of Local Industrial Strategies due to be delivered to government in the spring of 2020.

- 3.1.10. Infrastructure is one of the five foundations of productivity as stated within the White Paper. The Berkshire LIS framework document states that there are high levels of traffic congestion in Berkshire, an ‘inevitable consequence (and cost) of economic buoyancy’. The document recognises that behavioural changes need to be a central part of the solution, which includes investing in sustainable modes of travel, in order to alleviate congestion on Berkshire’s roads.
- 3.1.11. One of TVB LEP’s key priorities, to realise their vision to become the ‘best of both global and local’, is ‘Priority 4: vibrant places and supportive infrastructure’. A key step identified to improve transport is to encourage modal shifts and the development of sustainable transport solutions. In relation to spatial development, the Berkshire LIS framework document recognises that ‘good use is made of sites close to railway stations and motorway junctions, and in strategic transport corridors, nurturing the development of connected ecosystems.’ It is considered that the parking deck scheme, revised access/forecourt and the urban realm improvements, which are in close proximity to the Winnersh Triangle station, would contribute towards achieving the Berkshire LIS objectives under Priority 4.

## 4 ECONOMIC CASE

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- 4.1.1. Given that the predicted number of car trips captured by the proposed parking deck, in relation to its capacity, remains the same, there is no change in the transport user benefits for the parking deck, as set out within the post-business case technical note dated 14 May 2019. The technical note was prepared to discharge the conditions for approval set out in the Independent Assessment Summary report<sup>1</sup>, which was produced by Hatch Regeris following submission of the Winnersh Triangle Park and Ride Scheme full business case to the Thames Valley Berkshire Local Enterprise Partnership.
- 4.1.2. All economic benefits associated with the improvements to the station building have now been removed from the updated economic appraisal as these do not form part of the current proposals.
- 4.1.3. An allowance of 12.5% has been allowed for risk on the Winnersh Triangle Parking Deck scheme. Through a combination of data obtained from the Ground Penetration Radar survey, trial holes within the car park and the cost estimates obtained for the provision of the new transformer from the Distribution Network Operator, there is high certainty around the statutory equipment supply and diversion costs. Results from the ground investigation survey do not indicate the need for any onerous foundation requirement. The most appropriate form of drainage strategy has also been established during the preliminary design stage. All these costs have been captured within the scheme costs and, therefore, sit outside the 'risk pot'.
- 4.1.4. Given that around two thirds of the construction base cost is for an 'off the shelf' parking deck for which a fair degree of benchmarking of cost has taken place, it was considered an allowance of 10% for this element would be sufficient (approx. 2/3 x 10%). The remainder of the works has been considered at around 20% due to that being less defined and presenting more ground condition risk (approx. 1/3 x 20%). The combination of this approach to the costing of risk resulted in our allowance of 12.5% which we consider to be robust.
- 4.1.5. TAG Unit 1.2 states that, as project-specific risks become better understood, quantified and valued, it should be possible to better capture the factors that contribute to optimism bias within the risk management process, leading to 'cost maturity'. Therefore, as risk analysis improves as a scheme develops, it is expected that the analysis feeding into the quantified risk assessment will become more certain, reducing the reliance on optimism bias uplifts. Although the risk analysis has improved for the Winnersh Triangle Parking Deck scheme, the optimism bias has been retained as 15% for the current update to the economic appraisal, in order to ensure a robust cost benefit appraisal. It should be noted that the optimum bias is only included in the economic appraisal for calculating the BCR, and not in the financial case which sets out the additional funding sought.
- 4.1.6. The Analysis of Monetised Costs and Benefits (AMCB), Public Accounts (PA) and Transport Economic Efficiency (TEE) tables for the parking deck scheme are provided at Appendix A. The AMCB for the core scenario is presented in Table 4-1. All costs are presented in market prices and values.

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<sup>1</sup> TVB LEP Independent Assessors Report – Winnersh Triangle Park and Ride, March 2019

**Table 4-1 – AMCB: Parking Deck**

<b>Item</b>	<b>Costs and Benefits (In 2010 prices discounted to 2010)</b>
Noise	-
Air Quality	-
Greenhouse Gases	-
Journey Quality	-
Physical Activity	-
Accidents	-
Economic Efficiency: Consumer Users (Commuting)	£5,216,000
Economic Efficiency: Consumer Users (Other)	£3,248,000
Economic Efficiency: Business Users and Providers	£633,773
Wider Public Finances (Indirect Taxation Revenues)	£787,000
Present Value of Benefits (PVB)	£9,884,773
Present Value of Costs (PVC)	£2,710,022
Net Present Value (NPV)	£7,174,751
<b>BCR</b>	<b>3.65</b>

4.1.7. The core scenario shows a BCR of 3.65, which is classed as providing High value for money.

## 5 FINANCIAL CASE

### 5.1 SCHEME COSTS

5.1.1. A breakdown of the scheme costs is set out in Table 5-1.

**Table 5-1 – Scheme cost breakdown**

	Cost in 2019 prices
Parking deck structure and foundation	£2,135,100
Works identified to replace the SuDS drainage (including pavements, earthworks, new storage tanks etc)	£483,083
Electric vehicle charging and related infrastructure including transformer, switch room, distribution board, plant room)	£275,000
Other MEP items - distribution board, fire alarm, HVAC to plant room & CCTV	£70,000
Lift	£125,000
Items of construction contingency for items not identified and precise detail/spec (allowed @3%)	£92,645
Preliminaries and overheads on civil and ancillary works excluding car park deck	£210,166
Work by Statutory undertakers and others	£150,000
Survey/Investigate/Design/Procure/Supervise/manage & liaise	£400,000
<b>Sub-total</b>	<b>£3,940,994</b>
Risk (12.5%)	£492,500
<b>Risk-adjusted cost estimate excluding inflation</b>	<b>£4,433,494</b>
Inflation (4%): 2019-2021	£177,200
<b>Total budget estimate including inflation</b>	<b>£4,610,694</b>
<b>LGF already allocated</b>	<b>£2,845,140</b>
<b>S106 contributions</b>	<b>£1,050,000</b>
<b>Balance LGF sought</b>	<b>£715,554</b>

### 5.2 BUDGET AND FUNDING COVER

5.2.1. An estimated budgetary impact summary is outlined in Table 5-2 split by the respective financial year. Overall, the local council (S106) contributions will fund approximately 23% of scheme outturn costs, with devolved funding required for the remaining 77%. All of the S106 contributions have



already been secured and no risks, especially in terms of forward funding requirements, are therefore envisaged.

**Table 5-2 – Budgetary impact summary**

	<b>2019-2020</b>	<b>2020-2021</b>	<b>2021-2022</b>	<b>Total</b>
LGF Funds	£0	£3,560,694	£0	£3,560,694
S106 Contributions	£157,500	£262,500	£630,000	£1,050,000
<b>Total</b>	<b>£157,500</b>	<b>£3,823,194</b>	<b>£630,000</b>	<b>£4,610,694</b>

## 6 DELIVERY AND RISK

### 6.1 PROGRAMME AND DELIVERY

6.1.1. As per the current programme for the parking deck scheme, set out in Table 6-1, substantial start will be achieved on site by March 2021.

**Table 6-1 – Car park deck programme**

	2020												2021								
	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	
Determination of planning application																					
Detailed design of parking deck																					
Discharge of planning conditions/material amendment application																					
Procurement – Car park deck																					
Parking deck fabrication design & lead-in times for steel fabrication																					
Enabling works for the car park																					
Parking deck construction																					
Ancillary works on the surface car park - drainage, tarmac, power supply																					

6.1.2. As per the current construction programme, there will be a period of overlap between the construction of the parking deck and the access, turning head and urban realm. To better manage resources on site, the phasing of the construction will be planned such that any overlap between critical activities that are common to both the parking deck and the access/turning head/urban realm is kept to a minimum.

6.1.3. The overall Scheme is likely to be constructed in five phases as described below. These construction phases will be refined and finalised by WBC’s appointed contractor.

- Phase 0 - Enabling works (parking deck substructure and stats diversion at the new access)
- Phase 1 - Construction of the parking deck superstructure.
- Phase 2:
  - Remaining works at the surface car park (tarmac, SuDS reinstatement, signing and lining etc)
  - New fourth arm off Wharfedale Road Roundabout to be built ‘offline’ to retain bus access to Winnersh Triangle Station. This phase would include the construction of a bellmouth and approximately 45m of access road.
- Phase 3 - construction of the revised station forecourt, remaining access road and turning head. During this phase it is considered that temporary access to the railway station will be via the existing access road and Wharfedale Road south east arm. A temporary bus stop will be located within the existing bellmouth.
- Phase 4 - it is envisaged that access to the new station forecourt will be via the new access road and turning head, which will in turn allow the urban realm improvement works to be undertaken in the area of the existing bellmouth and access road to the railway station. The dedicated right turn bus lane on Wharfedale road will be closed

6.1.4. The ‘remaining works at the surface car park’ in phase 2 will continue in parallel to phase 3 and, to a lesser degree, phase 4. The existing turning head will be operational during construction Phases 0, 1 and 2 and will close in Phase 3 in order to minimise disruption to station drop offs, buses and taxis. It is envisaged that a proportion of the main car park can stay in operation during phases 0, 3 and 4.

## 6.2 PROCUREMENT

- 6.2.1. With regards to procurement, VolkerHighways, WBC's term contractor, have already been appointed on an Early Contractor Involvement basis to provide early input into the design process. Given that the value of the car park work excluding design fees, risk, surveys and other investigations would be less than the Official Journal of the European Union (OJEU) threshold of £4.73m, the intention is for the work to be directly awarded to VolkerHighways without going through the competitive tendering process. Given the specialist nature of the works, VolkerHighways intends to sub-contract the design and construction of the parking deck to a specialist Design and Build supplier. Benefits of this approach include:
- Use of 'off-the-shelf' design which would minimise detailed and fabrication design times.
  - Tried and tested methods of construction using prefabricated modular elements, which will significantly reduce construction times, compared to traditional construction methods.
  - Higher certainty of costs for items that are included under the Design and Build supplier's remit.
- 6.2.2. VolkerHighways have undertaken a due diligence of various parking deck suppliers in the UK by evaluating them on their experience, reputation, quality of work and value for money. Following this exercise, VolkerHighways have identified a specialist supplier who would undertake the design and build of the parking deck. The due diligence work undertaken by VolkerHighways would ensure that the preferred specialist supplier offers the right balance between cost and quality.
- 6.2.3. Whilst the parking deck superstructure will be built by a specialist supplier, construction of the sub-structure and other ancillary civils work on the ground will be undertaken by VolkerHighways under the terms of their existing contract with WBC, which covers costs of such items, thereby ensuring cost certainty and value for money.

## 6.3 RISKS

- 6.3.1. It is anticipated that some utility diversions will be required as a consequence of the scheme. These diversions could involve some engineering challenges; however, early contractor involvement will mitigate against any potential utility or construction risks. In light of the surveys undertaken to date, including trial hole surveys that will assist in establishing the location of apparatus in key areas, there is high certainty on the ground conditions as well as the statutory equipment diversions. These have been comprehensively captured within the scheme cost estimate.
- 6.3.2. WSP, who are acting as the Principal Designer for the scheme has been coordinating with utility companies through the C3 process to minimise risk during the construction programme. Through a combination of trial hole surveys, which have provided a good indication of the actual depth of the stats equipment, and the C3 quotes obtained from various utility companies including the Distribution Network Operator, there is a high degree of confidence in the cost of utility supply and diversions at this stage.
- 6.3.3. No planning risks are currently anticipated. It is expected that all outstanding technical queries and requests for information, sent by the respective officers at the Council, can be satisfactorily addressed. Any subsequent changes to the design, during the design and build stage, would be subject to a minor/material amendment application. The planning timescale for a material amendment application is 8 weeks, which can be accommodated within the current project timescales.
- 6.3.4. Key risks to the programme are:



## ■ COVID-19

- Delays to completion of the detailed design due to suppliers and utility companies being affected by the COVID-19 situation. There may be potential delays to the construction stage as well, if suppliers are unable to source materials to scheduled timescales. This is a residual risk common to all such projects at present, and will remain as such for the foreseeable future, since uncertainty around the pandemic lockdown continues to evolve.

## ■ Availability of an alternative car park

- Uncertainties around the availability of an alternative car park when the existing car park is closed for construction. The existing car park may have to be closed either fully or partially to facilitate safe construction. The former Loddon Valley park and ride car park adjacent to the Showcase cinema, located immediately to the west of the Winnersh Triangle car park, has been identified as the preferred alternative car park during construction. However, owners of the car park have informed the council of a risk that the car park may be subject to change of ownership, as well as a potential change of land use, in which case the car park may not be available for use during construction. This may be mitigated through a combination of keeping the existing car park partially operational by means of adequate traffic management measures, and by suspending a proportion of the parking during construction. The Council will ensure that stakeholders including Network Rail and Reading Buses are adequately consulted in arriving at a solution that is acceptable to all parties.
- The temporary measures could potentially have an impact on the revenue from the car park and the bus operations. However, the Council are actively seeking alternative parking solutions including the use of the former Loddon Valley park and ride site and also, as a potential fallback, Thames Valley Park and Ride, which is due to open in the next few months, for temporarily relocating the bus P&R element. The western end of the existing Winnersh Triangle P&R has been identified to accommodate the rail users who make up approximately 20% of the car park users. The western end of the car park is outside the area affected by the construction activities and would therefore offer a viable solution to cater for the rail users.
- The loss of parking revenue during the temporary (part) closure of the existing car park is expected to be minimal as the bus Park and Ride users currently pay for parking on the bus as part of their ticket purchase. This arrangement will continue to be in place regardless of the temporary relocation of the bus Park and Ride to any alternative site. It is not expected that there will be any loss of rail ticket revenue as a sufficient portion of the car park is planned to be kept open to serve rail users. However, if there were to be any such loss this would be borne by South Western Railways. Bus ticket revenue reduction is expected to be limited as the bus is likely to be run from another location but any reduction in use would impact on Reading Buses who run this as a commercial service. WBC are liaising with them about temporary arrangements during construction

## ■ Potential changes to design

- Changes to the parking deck design during the detailed design stage, which may have a cost implication. In order to mitigate this risk, the design will be subject to regular reviews to ensure that the costs do not exceed the current funding allocation.
- Before the specialist supplier enters into a formal contract to commence the design and build, WSP have requested VolkerHighways and their supplier to provide a firm budget price



estimate based on their proposed design proposal and the deck performance specification. The provisional cost estimate, which is expected over the next few days, would assist in ascertaining whether the overall scheme cost is affordable within the current funding allocation. In addition, the cost of the superstructure will be benchmarked against cost estimates independently obtained by WSP from other suppliers across the UK to ensure that the supplier's costs are comparable, consistent or better than their competitors. Risk of potential cost escalation will be proactively managed through value engineering and ensuring that the scope of work or the performance specification is agreed upfront to avoid any 'scope creep'.

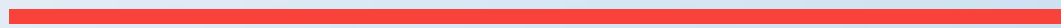
## 7 SUMMARY

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- 7.1.1. Since the FBC was submitted in March 2019, the scope of the car parking improvements and overall works at the station has changed significantly. Currently, there are many new elements to the scheme, some of which will generate additional benefits, whereas others are fundamental to the successful design and delivery of the original scheme but were not identified during the business case submission due to the lack of design maturity at the time
- 7.1.2. The strategic case of the scheme is very compelling. Doing nothing at Winnersh Triangle station will mean that drivers are not offered an attractive, alternative means of transport and are therefore likely to remain in their cars rather than switch to an enhanced park and ride facility. Congestion relief will also mean that journey time reliability for commuters and other road users will be improved. The scheme would engender a number of additional benefits including the provision of electric vehicle charging and PV panels, which will contribute to the Council's sustainability objectives for the borough.
- 7.1.3. With a core BCR of 3.65, the scheme would generate **high** value for money.
- 7.1.4. Subject to potential delays around the evolving COVID-19 situation, it is anticipated that the scheme would be able to achieve a 'substantial start on site' by March 2021.

# Appendix A

TEE, PA AND AMCB



Economic Efficiency of the Transport System (TEE)

Core Scenario

<b>Non-business: Commuting</b>		ALL MODES	ROAD	BUS and COACH	RAIL	OTHER	
<u>User benefits</u>		TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	£4,201,000			-	-	-	
Vehicle operating costs	£1,015,000					-	
User charges				-	-	-	
During Construction & Maintenance				-	-	-	
<b>COMMUTING</b>	<b>£5,216,000</b>	(1a)	£0	-	-	-	
<b>Non-business: Other</b>		ALL MODES	ROAD	BUS and COACH	RAIL	OTHER	
<u>User benefits</u>		TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	£3,121,000.00			-	-	-	
Vehicle operating costs	£127,000.00					-	
User charges				-	-	-	
During Construction & Maintenance				-	-	-	
<b>NET NON-BUSINESS BENEFITS: OTHER</b>	<b>£3,248,000</b>	(1b)	£0	-	-	-	
<b>Business</b>			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers
<u>User benefits</u>							
Travel time	£765,000.00				-	-	-
Vehicle operating costs	£616,000.00						-
User charges					-	-	-
During Construction & Maintenance					-	-	-
<b>Subtotal</b>	<b>£1,381,000</b>	(2)	£0	£0	-	-	-
<b>Private sector provider impacts</b>					Freight	Passengers	
Revenue	£0				-	-	-
Operating costs					-	-	-
Investment costs					-	-	-
Grant/subsidy					-	-	-
<b>Subtotal</b>	<b>£0</b>	(3)			-	-	-
<b>Other business impacts</b>							
Developer contributions	-£747,227	(4)	-	-	-	-	-
<b>NET BUSINESS IMPACT</b>	<b>£633,773</b>	(5) = (2) + (3) + (4)					
<b>TOTAL</b>							
Present Value of Transport Economic Efficiency Benefits (TEE)	<b>£9,097,773</b>	(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

**Public Accounts (PA) Table**

**Core Scenario**

	ALL MODES	ROAD	BUS and COACH	RAIL	OTHER
<b>Local Government Funding</b>	<b>TOTAL</b>	<b>INFRASTRUCTURE</b>			
Revenue	-£538,506	-			-
Operating Costs	£176,195	-			-
Investment Costs	£3,819,560	-			-
Developer and Other Contributions	-£747,227	-	-	-	-
Grant/Subsidy Payments		-	-	-	-
<b>NET IMPACT</b>	<b>£2,710,022 (7)</b>	-	-	-	-
<b>Central Government Funding: Transport</b>					
Revenue	£0	-			-
Operating costs	£0	-			-
Investment Costs	£0	-			-
Developer and Other Contributions	£0	-	-	-	-
Grant/Subsidy Payments	£0	-	-	-	-
<b>NET IMPACT</b>	<b>£0 (8)</b>	-	-	-	-
<b>Central Government Funding: Non-Transport</b>					
Indirect Tax Revenues	-£787,000 (9)	-	-	-	-
<b>TOTALS</b>					
<b>Broad Transport Budget</b>	<b>£2,710,022 (10) = (7) + (8)</b>				
<b>Wider Public Finances</b>	<b>-£787,000 (11) = (9)</b>				
Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers. All entries are discounted present values in 2010 prices and values.					

## Analysis of Monetised Costs and Benefits

	Core scenario	
Noise		(12)
Local Air Quality		(13)
Greenhouse Gases		(14)
Journey Quality	£0	(15)
Physical Activity		(16)
Accidents		(17)
Economic Efficiency: Consumer Users (Commuting)	£5,216,000	(1a)
Economic Efficiency: Consumer Users (Other)	£3,248,000	(1b)
Economic Efficiency: Business Users and Providers	£633,773	(5)
Wider Public Finances (Indirect Taxation Revenues)	£787,000	(11) - sign changed from PA table, as PA table represents costs, not benefits
Present Value of Benefits (see notes) (PVB)	£9,884,773	$(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)$
Broad Transport Budget	£2,710,022	(10)
Present Value of Costs (see notes) (PVC)	£2,710,022	$(PVC) = (10)$
<b>OVERALL IMPACTS</b>		
<b>Net Present Value (NPV)</b>	£7,174,751	$NPV = PVB - PVC$
<b>Benefit to Cost Ratio (BCR)</b>	3.65	$BCR = PVB / PVC$







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