

City Deal and Growth Deal Programme Board

Business Case Proforma

1. Project title and proposing organisation(s)

Doxey Road and Stafford Western Access Route, Staffordshire County Council

2. Decision date

November 2017 – final LEP approval for release of Growth Deal 3 funding.

3. Decision summary: Recommendation etc.

- a) The LEP Executive Group is requested to consider the summary of the business case for the scheme.
- b) It is recommended that £2m of Growth Deal 3 funding is provided in 2018/19 and £6.5m in 2019/20.

4. Is the decision exempt from being publically reported by the LEP (if so please specify the reasons why)

No

5. Options appraisal

An Options Assessment Report for the Stafford Western Access Route was published in 2010 in line with Department for Transport Guidance. It assessed nine potential interventions including a sustainable transport option and eight highway options (two of which emerged from consultation with local residents and stakeholders). All options were scored against the following:

- Achieving intervention objectives which (in 2010) included:
 - Provide the necessary transport infrastructure required to deliver development in Stafford as identified in the West Midlands Regional Spatial Strategy
 - Reduce congestion on routes into and around the town centre which act as a constraint on regeneration proposals
 - Facilitate improved access by sustainable modes between housing growth areas and the town centre
 - Facilitate improved access to public transport services
 - Improve safety and security for all road users
- The Government's five transport objectives in 2010: Environment, Safety, Economy, Accessibility and Integration
- Acceptability of options taking into account the outcome of public consultation events
- Scheme cost
- Deliverability

The result of the appraisal identified that Option F (Green) should be taken forward as the Preferred Option as, overall, it scored best in the assessment. The preferred route is shown in Figure 1 under Section 7: 'Location of Proposal'. It had the highest benefit to cost ratio; was the most popular route in a public consultation exercise; and achieved 85% of the intervention objectives.

All other highway options were ruled out based on the overall results of the assessment and it was concluded that a solely sustainable transport solution would not satisfactorily meet the intervention objectives. The alternative highway options and why they were ruled out is summarised in Table 1.

Table 1: Alternative Highway Options

Alternative Highway Option	Outcome of Appraisal
Martin Drive to Doxey Road.	Does not provide an alternative route to the north of the town centre and congestion and pedestrian severance remains in the town centre. Low benefit to cost ratio.
A historic protected alignment from Kingsway/Redgrave Drive junction, through land owned by St. Modwen to Doxey Road and linking onto Chell Road, bypassing Broad Eye.	Deliverability issues related to construction of a new road bridge over the West Coast Main Line and the demolition of houses in Castletown. Congestion remains on Chell Road, Broadeye / Doxey Road and Gaol Square. Additional delays caused by new traffic signals required on Chell Road. Pedestrian severance remains on Chell Road. Low benefit to cost ratio.
A more direct alignment of the preferred option, minimising impact on communities, but through the Site of Special Scientific Interest (SSSI).	Direct impact on the SSSI that cannot be mitigated.
A re-alignment of the preferred route that takes the route as far as possible from the SSSI.	Detrimental impact to residents in houses along Doxey Road.
An alignment suggested during the consultation process that links directly into Gaol Square, rather than Foregate Street.	Congestion and pedestrian severance remains on Chell Road and increased congestion forecast at A34 Foregate.
A re-alignment of the route between Martin Drive and Doxey Road that avoids the need to acquire any land owned by St. Modwen.	Additional distance makes the route less attractive to through traffic.
The preferred alignment between Martin Drive and Doxey Road and along Doxey Road and an alternative link onto Chell Road, bypassing Broad Eye.	Congestion remains on Chell Road, Broadeye / Doxey Road and Gaol Square. Additional delays caused by new traffic signals required on Chell Road. Pedestrian severance remains on Chell Road. Low benefit to cost ratio.

5.1. Strategic case

The County Council is proposing to construct the Stafford Western Access Route which will run through the west side of Stafford in Staffordshire. It will be a 1.2km, 7.3 metre wide, single carriageway road, between Martin Drive and A34 Foregate Street. The Stafford Western Access Route supports four SEP priorities:

Competitive Urban Centres: enables growth of the town centre and delivery of housing and employment development, including land at Doxey Road

Connected County: enhances connectivity to the town centres, and housing and employment sites

Skilled Workforce: improves access between residential areas and the urban centre

Sector Growth: a more attractive and accessible environment will support growth in the business / professional service and retail sector

Investing in road infrastructure and supporting the Doxey Road regeneration site will help to maximise the potential to increase productivity and enabling Stafford to play its role in increasing and re-balancing Staffordshire's productivity levels.

5.2. Economic case

The Economic Case follows WebTAG (Web-based Transport Analysis Guidance) which is the Department for Transport's transport appraisal guidance and toolkit. The Appraisal Summary Table in Appendix 1 provides a summary of all the monetised and qualitative impacts. The benefits of the Stafford Western Access Route (SWAR) and the purchase of land for the Doxey Road Regeneration site will only be realised with funding from the LEP.

The Stafford Western Access Route Major Scheme Business Case was published in January 2015 and an Addendum was produced in June 2016. The Addendum provides a review of the appraisal and explains how the scheme has changed since January 2015.

Since 2015, the SWAR has been reviewed and now includes all three Sections (A, B and C) between Martin Drive, Doxey Road and A34 Foregate Street. Previously the 2015 business case focused on assessing the benefits of Section A and B, with Section C (Martin Drive to Doxey Road) already assumed to be delivered by developers.

The January 2015 MSBC traffic assessment compared the difference between completing Section C only and completing the full SWAR (i.e. measuring the impact of Sections A and B (assuming C is already complete). The revised assessment in the Addendum compares the difference between no SWAR and completing the full SWAR.

In summary, it is now forecast that completion of the SWAR will improve the overall performance of the local highway network, reducing overcapacity queued time by 42% and 39% in the 2033 AM and PM peaks respectively. It is expected to reduce traffic flows on bypassed roads and significantly improve journey times, particularly between the North and West of Stafford. Table 2 provides the predicted reduction in traffic flows in 2033 on key routes to be bypassed.

Table 2: Forecast Reduction in Traffic as a Result of Scheme (2033)

Roads Bypassed	% Reduction	
	AM Peak	PM Peak
Newport Road (east of Kingsway)	-19%	-13%
Station Road	-15%	-0%
Chell Road	-44%	-30%
Foregate Street (south of Western Access Route)	-48%	-56%
Doxey Road	-18%	-31%

Economic Impact

The Benefit to Cost ratio (BCR) has been calculated by Atkins Consultants. All benefits and costs have been assessed over a 60-year project lifetime then discounted back to a **common base year of 2010**. Discount rates of 3.5% and 3.0% have been applied to benefits and costs for years 1-30 and 31-60 respectively. The optimism bias for the scheme remains at 15% based on the reasons stated in the January 2015 MSBC. The SWAR has not as yet reached full approval when a 3% optimism bias uplift will be applied.

Transport Economic Efficiency (TEE)

Table 3 presents the TEE benefits. The scheme produces substantial benefits amounting to £116.8 million. These benefits are mainly generated by travel time savings. The scheme will provide a shorter route for many trips providing both time savings and lower vehicle operating costs. The reduced congestion in the town centre resulting from the scheme will also provide time savings for traffic not directly using the new roads. Construction and maintenance delays have been taken into account.

Table 3: TEE Table

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting		ALL MODES	ROAD	BUS and COACH RAIL		OTHER
<u>User benefits</u>		TOTAL	Private Cars and LGVs	Passengers	Passengers	
Travel time		38,325		38,325		
Vehicle operating costs		1,456		1,456		
User charges		0		0		
During Construction & Maintenance		-234		-234		
NET NON-BUSINESS BENEFITS: COMMUTING		39,547	(1a)	39,547		
Non-business: Other		ALL MODES	ROAD	BUS and COACH RAIL		OTHER
<u>User benefits</u>		TOTAL	Private Cars and LGVs	Passengers	Passengers	
Travel time		46,601		46,601		
Vehicle operating costs		-1,308		-1,308		
User charges		0		0		
During Construction & Maintenance		-266		-266		
NET NON-BUSINESS BENEFITS: OTHER		45,027	(1b)	45,027		
Business			Goods Vehicles	Business LGVs	Cars & Passengers	Freight s
<u>User benefits</u>						
Travel time		37,656	17,758		19,898	
Vehicle operating costs		5,540	1,088		4,453	
User charges		0				
During Construction & Maintenance		-265			-265	
Subtotal		42,932	(2)	18,846	24,086	
Private sector provider impacts					Freight s	Passenger s
Revenue		0				
Operating costs						
Investment costs						
Grant/subsidy						
Subtotal		0	(3)			
Other business impacts						
Developer contributions		-10,701	(4)			
NET BUSINESS IMPACT		32,231	(5) = (2) + (3) + (4)			
TOTAL						
Present Value of Transport Economic Efficiency Benefits (TEE)		116,806	(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

Table 4 presents the public accounts. Investment costs are expected to be paid by the Stoke-on-Trent and Staffordshire LEP, through the Growth Deal, and Staffordshire County Council, therefore assuming no central government costs.

The scheme investment costs amount to £57.181m. The cost of maintenance compared to the do-minimum will result in an additional cost of £0.267 million. This is offset by developer contributions equating to £10.701m.

Table 4: Public Accounts

Public Accounts					
	ALL MODES TOTAL	ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Funding					
Revenue					
Operating Costs	267	267			
Investment Costs	57181	57181			
Developer and Other Contributions	-10701	-10701			
Grant/Subsidy Payments					
NET IMPACT	46747 (7)	46747			
Central Government Funding: Transport					
Revenue					
Operating costs					
Investment Costs		-			
Developer and Other Contributions					
Grant/Subsidy Payments					
NET IMPACT	0 (8)				
Central Government Funding: Non-Transport					
Indirect Tax Revenues	-132 (9)	-132			
TOTALS					
Broad Transport Budget	46,747 (10) = (7) + (8)				
Wider Public Finances	-132 (11) = (9)				

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

Table 5 presents the Analysis of Monetised Costs and Benefits from TUBA. Benefits relating to accidents and carbon emissions are added to the present value of TEE benefits to produce an overall PVB of £120.732 million. When combined with the PVC of £46.747 million, this results in a NPV of £73.984 million and a BCR of 2.58. The scheme therefore represents high value for money, based on DfT guidance (i.e. a BCR of greater than 2.0).

The benefits exclude journey time reliability and benefits generated during the inter-peak, weekend and overnight time periods. Benefits to public transport are also not included even though public transport would benefit from the reduced congestion in the town centre. The PVB derived, therefore, may be considered conservative.

Table 5:
Analysis of Monetised Costs and Benefits

Noise	-400	(12)
Local Air Quality	2429	(13)
Greenhouse Gases	-33	(14)
Journey Ambience		(15)
Accidents	1,798	(16)
Economic Efficiency: Consumer Users (Commuting)	39,547	(1a)
Economic Efficiency: Consumer Users (Other)	45,027	(1b)
Economic Efficiency: Business Users and Providers	32,231	(5)
Wider Public Finances (Indirect Taxation Revenues)	132	- (11) - sign changed from PA table, as PA table represents costs, not benefits
Option Values		(17)
Present Value of Benefits ^(see notes) (PVB)	120,732	(PVB) = (12) + (13) + (14) + (15) + (16) + (1a) + (1b) + (5) + (17) - (11)
Broad Transport Budget	46,747	(10)
Present Value of Costs ^(see notes) (PVC)	46,747	(PVC) = (10)
OVERALL IMPACTS		
Net Present Value (NPV)	73,984	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	2.58	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in

Wider Economic Benefits

The SWAR directly unlocks 2,200 houses in the West of Stafford out of a total of 5,560 homes planned to be delivered by 2031 in Stafford Town. This represents a considerable investment by developers who will also be providing a new primary school, local centre and a significant financial contribution towards secondary education places. Growth in the West of Stafford also includes Doxey Road regeneration scheme that is directly related to the delivery of Section C of the SWAR. As well as contributing to the forecast growth in homes and jobs, the regeneration scheme will secure 100 jobs; reclaim 19.5 acres of derelict land and create high quality public open space.

New housing is vital to increase labour supply and attract investment in Stafford which has a small number of jobseekers but strong growth potential. 2,200 new homes will support around 9,500 direct (construction), indirect (suppliers providing goods, services and materials) and induced (supported by increased spending) jobs. These new homes will also contribute around £22m in additional taxes (local and national) and around £60m increased spend in local shops and services.

The 2,200 new homes are located close to Stafford rail station and in addition to new highway capacity the SWAR will provide important, footway / cycle links and bus connectivity, allowing residents to conveniently access rail services.

Delivery of the SWAR will help to realise the benefits of HS2 classic compatible services that are planned to serve the rail station from 2026. With a proposed journey time of 64 minutes to London, HS2 has the potential to attract significant investment to the town and regenerate the area around the rail station, making it a significant gateway to Stafford. As demand for rail travel grows, the SWAR will be vital in alleviating congested conditions particularly around the station and importantly help manage the local impact of future planned development. The SWAR could also form an access to new areas of rail station parking that will be needed once HS2 serves the town.

Environmental Impact

The Environmental Statement produced for the planning application for the SWAR that was submitted and approved in 2015 replaces the environmental impact assessment provided in the January 2015 MSBC. The Environmental Statement was prepared to comply with the EIA Regulations which implement the European Council Directive 2011/92/EU (hereafter referred to 'the EIA Directive'). The approach is consistent with DMRB guidance Volume 11 and Interim Advice Note (IAN) 126/09.

All environmental impacts required to be assessed under WebTAG are included in the planning application Environmental Statement. The results are provided in the Environmental Statement Non-Technical Summary in Appendix 2 and summarised in the Appraisal Summary Table in Appendix 1. No additional residual adverse impacts were identified through this process compared to the January 2015 MSBC taking into account proposed mitigation measures.

Social Impact

Out of the TEE benefits amounting to £116.806 million over the 60-year project lifetime, £84.574 million is attributable to benefits for commuters and other users (see Table 3). This is a sensible proportion as, whilst business users have a higher value of time, consumer users form a significantly higher proportion of total road users. These benefits are generated by travel time and vehicle operating cost savings which will have benefits for personal affordability.

Benefits related to journey quality, accidents and security have been assessed in the planning application Environmental Statement under 'Vehicle Travellers' and severance issues have been reviewed under 'Pedestrians, Cyclists, Equestrians and Community Assets'. Further details are provided in the Environmental Statement Non-Technical Summary provided in Appendix 2

The only significant changes reported, compared to the January 2015 MSBC relate to 'severance'. The following improvements to pedestrian and cycle infrastructure are proposed to mitigate the negative impact of the SWAR on amenity levels and community severance:

- A toucan crossing will be incorporated into the A34 Foregate Street / Greyfriars Place signalised junction. This replaces the existing crossing currently located to the south of the junction and provides a facility for cyclists
- New informal pedestrian crossing facilities at Madford Retail Park to cross Greyfriars Place between Tenpin bowling and Halfords and across the car park

entrance to Lidl and Curry's. Infrastructure will be installed to turn them into controlled crossings, if required later

- A new toucan crossing for pedestrians and cyclists at Madford Retail Park to cross Greyfriars Place which the Scheme joins into
- A new toucan crossing for pedestrians and cyclists to the north of the new roundabout at the Doxey Road / Stafford Western Access Route / Sainsbury's entrance to assist people crossing the Scheme
- A new toucan crossing for pedestrians and cyclists to cross the Doxey Road adjacent to Timberfields and Castletown and aligning with The Isobel Trail (NCN 5)
- New informal pedestrian crossing facilities at each arm of the roundabout at the Doxey Road/ Stafford Western Access Route to the west of Castletown
- An existing public right of way runs parallel to Martin Drive to the north; this will be rerouted slightly to tie in with the Martin Drive / Rose Hill / Stafford Western Access Route roundabout to provide a crossing point for users and a better link with the Greenway (NCN 55)
- New informal pedestrian crossing facilities at each arm of the roundabout at Martin Drive / Rose Hill / Stafford Western Access Route
- A new toucan crossing for pedestrians and cyclists to be able to cross Kingsway in the vicinity of the walk / cycle route to Castle Street
- A new toucan crossing for pedestrians and cyclists to cross Kingsway adjacent to the A518 Newport Road / Kingsway roundabout
- New signalised pedestrian crossing facilities at the junction of the A518 Newport Road and West Way, if required later

5.3. Commercial case

Staffordshire County Council chose Amey in March 2014 as its new strategic partner of choice for Infrastructure+, following a rigorous and highly competitive twelve month procurement process. This innovative partnership has been specifically designed to build capacity, add value and ensure we can deliver major projects such as the Stafford Western Access Route in the most efficient manner. The partnership allows the contractor to be involved at the earliest possible opportunity through co-location, with designers and specialists working alongside the on-site delivery teams.

The partnership is providing an end-to-end approach from scheme inception to construction and the SWAR has already benefited from this collaborative working with Amey providing construction advice.

5.4. Financial case

The 2017 Quantified Cost Estimate for the scheme is £62.8m, including forecast inflation. The costs have increased since the publication of the January 2015 MSBC as a result of the following:

- At the request of the developer, Section C is now included within the detailed design process, rather than assuming it will be delivered through a S278
- Progress of detailed design of Sections A and B, taking into account ground and utility investigations, early contractor involvement, a review of risks and new inflation forecasts. Construction costs have increased mainly due to the complex ground conditions needed to extend the viaduct

Table 6 provides the breakdown of funding sources including the degree to which other bodies have agreed to make financial contributions and the basis on which the contributions are to be made. The County Council, through its partnership with Amey, continues to make every effort to drive down costs and make savings where possible.

Table 6: SWAR Breakdown of Funding Sources

Funding Sources and Status	Funding (£m)
Growth Deal 1 funding secured from the SSLEP for section between Doxey Road and Foregate Street	£24.3m
Growth Deal 1 funding secured from the SSLEP for sustainable transport provision associated with the SWAR	£0.5m
Growth Deal 3 funding secured by the SSLEP for completion of the full route between Martin Drive and Foregate Street and purchase of land to enable regeneration of the Doxey Road site	£8.5m
Confirmed S278 / S106 developer contributions (based on the level of development traffic using the SWAR)	£15.4m
County Council contribution agreed by Cabinet	£11.6m
Stafford Borough Council have agreed to contribute £2.5m to the project	£2.5m
TOTAL	£62.8m

Due to the required changes in the funding package and delays related to land acquisition, the funding profile has changed since the 2015 MSBC. The main construction period is now estimated to be between 2018 and 2020. Table 7 provides the funding profile for the scheme.

Table 7: Funding Profile

Financial Year	Total
Pre 2015/16	£1,022,229
2015/16	£1,475,227
2016/17	£5,019,905
2017/18	£5,284,801
2018/19	£12,018,474
2019/20	£22,074,688.00
2020/21	£7,668,358.00
2021/22	£8,227,636.00
	£62,791,318

5.5. Management case

The SWAR programme is being managed through a governance structure that provides a clear decision-making line to the LEP. A Project Board has been formed that is chaired by Staffordshire County Council's Commissioner for Highways and the Built County. The Cabinet Member for Economic Growth is a member of the Project Board to ensure that decisions made are reported to the LEP via the Cabinet Leader. The Board is also attended by the Finance Manager

in a project assurance role and the Connectivity Strategy Manager who is responsible for transport policy and strategy and the production of the business case.

Faithful+Gould has been commissioned by Staffordshire County Council to undertake structured updates of the risk register and to re-calculate the Quantitative Cost Risk Analysis (QCRA). Risk assessment and management workshops have been held in July and November 2015, and in October and November 2016. Project risks, cost uncertainties and proposed mitigation measures are reviewed at the workshops.

When new risks and mitigation measures have been identified, they have been allocated to the most appropriate owner. Risks that have the greatest impact on delivery have been closely monitored and managed. Outside of the formal workshops, risk management has formed an essential part of the development of the project and meetings with the LEP have enabled risks to be continually reviewed and reported.

5.6. Resource and VFM analysis

See Strategic Case in Section 5.1, Economic Case in Section 5.2 and Financial Case in Section 5.4.

6. Consultation process

The compelling case in the public interest for the preferred route of the SWAR has been accepted by the Department for Transport, Stoke-on-Trent and Staffordshire Local Enterprise Partnership, Staffordshire County Council Cabinet and Planning Committee, Stafford Borough Council and the Member of Parliament for Stafford Constituency.

In 2013, the SWAR was independently examined by transport consultants acting as technical advisor to the Stoke-on-Trent and Staffordshire Local Enterprise Partnership (LEP). The scheme was assessed in terms of its Strategic, Economic, Management, Commercial and Financial Cases. The compelling case for the SWAR was independently approved and the scheme was identified as a priority scheme in the LEP's Strategic Economic Plan. As a result, the Government's Growth Deal announcement in July 2014 accepted the business case and committed to building the SWAR.

The case was accepted by an independent Planning Inspector at the Public Inquiry in 2013 for 'The Plan for Stafford Borough' which was adopted in June 2014. The case for the SWAR was also accepted by the County Council's Planning Committee in November 2015 when the scheme was granted planning consent.

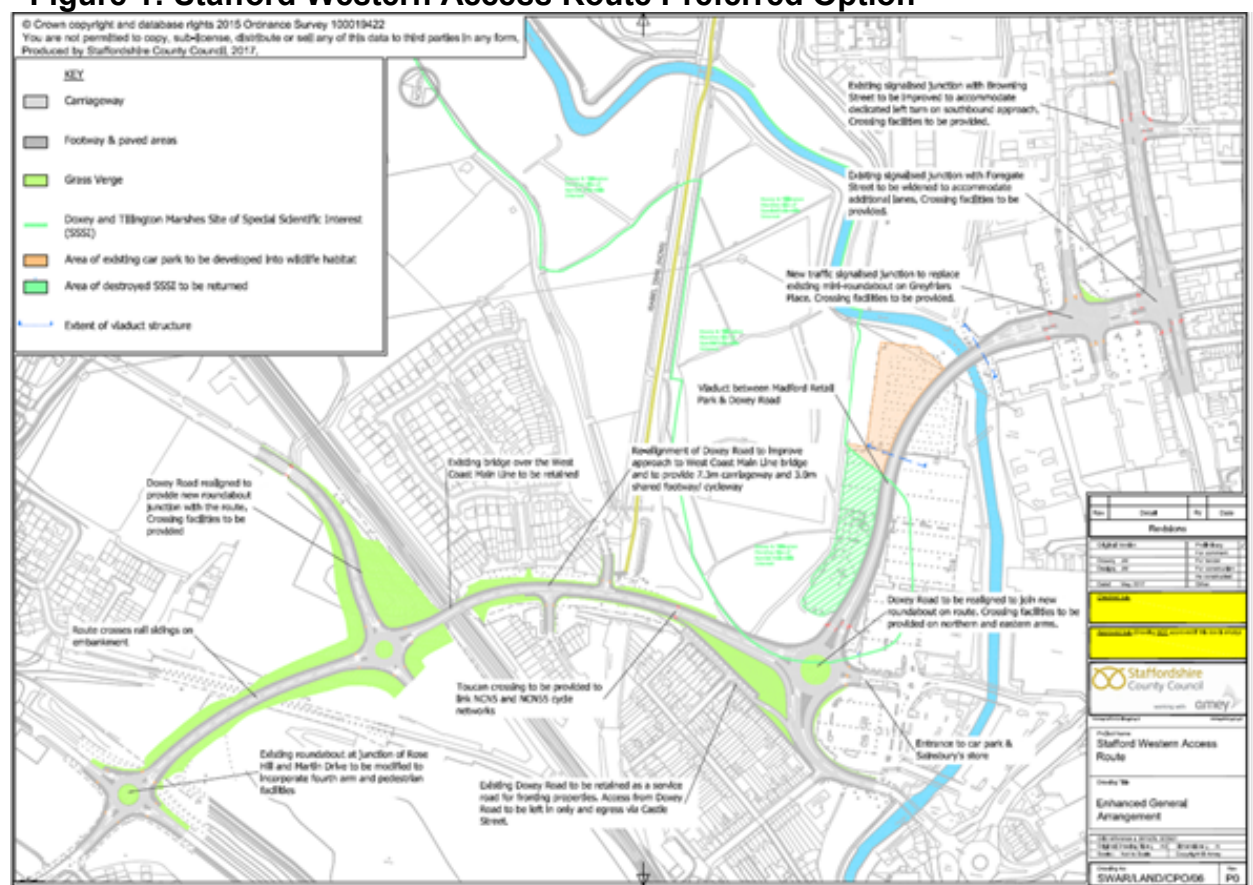
On 19th November 2014, Staffordshire County Council Cabinet resolved, subject to necessary funding being in place, to make the Orders required to deliver the SWAR. This resolution was reaffirmed by the Cabinet on 21st September 2016 when members were updated on the scheme and its delivery. In particular, members were informed that the whole of the SWAR would be provided by the County Council, rather than a part being delivered by third party developers.

The Statement of Community Involvement submitted as part of the planning application in June 2015 provides details of all consultations that have taken place since the first community events in December 2009 and January 2010 when initial scheme options were considered. It includes an updated Communication Plan. Consultations and stakeholder management that has taken place since the publication of the Statement of Community Involvement in June 2015 includes the following:

- Responses to the planning application
- Public information boards on the line of the proposed route
- West of Stafford Strategic Development Location masterplan meetings organised by Stafford Borough Council
- Saint Gobain development meetings
- Meetings with other land owners along the route
- Castletown and Castlefields Residents' Association meetings
- Stafford Rotary Club presentation
- Network Rail meeting
- Western Power Distribution meetings
- Environment Agency and Staffordshire Wildlife Trust meetings
- Updates provided to local councillors and Member of Parliament

7. Location of proposal

Figure 1: Stafford Western Access Route Preferred Option



8. Risk analysis

The latest risk register produced independently by Faithful+Gould is provided in Appendix 3. The main outstanding risks are currently as follows:

- Adverse weather conditions and flooding may affect the programme. Scheme costs and programme may be affected
- Delays to construction as a result of statutory undertakers diversion /protection works. Early engagement has taken place to minimise this risk
- Unforeseen impact of pile driving activity
- Land may need to be acquired using the CPO process however negotiations are ongoing to limit any potential delays to the programme

9. Legal analysis

The project is compliant with the County Council's Equal Opportunities Policy and is compliant with the rules of state aid.

Developer contributions have been secured through a Section 106 Agreement and under a Section 278(5) of the Highways Act 1980. The S278 contribution will be phased and all payments will be required by 31/3/2031. The County Council will therefore need to front-fund the SWAR in order to realise the benefits and enable construction to commence. Monies will then be credited to the authority through regular payments from the developer made in accordance with the terms of the Section 278 Agreement. This approach is common place with such legal agreements, with the County Council making adequate financial provision to cover forward funding.

The County Council has completed the acquisition of land from Stafford Borough Council. Terms have been agreed for the acquisition of land from Doxey Road Limited and land owners on the section of road from Martin Drive to Doxey Road. The County Council's legal team is progressing the sale contracts and it is envisaged that these acquisitions will be completed in advance of a Public Inquiry.

10. Delivery

On 5th November 2015, the Planning Committee accepted the recommendation to approve the planning application by Staffordshire County Council for the construction of the SWAR, subject to the conditions reported on 24th December 2015. Planning permission for development was granted pursuant to powers under the Town and Country Planning Act 1990 and Regulation 3 of Town and Country Planning General Regulations 1992.

Following the serving of the Compulsory Purchase Orders and Side Road Orders, seven objections were received and it is currently expected that a Public Inquiry will be held in April 2018. Prior to and following the serving of the CPO, officers have been working to negotiate with all affected land owners to avoid the need for the Public Inquiry. The current status of land acquisition negotiations with CPO objectors is summarised in Table 8.

Table 8: Status of Objections

Owner	Objections		
	CPO	SRO	Status
<i>Qualifying persons under section 12(2)(a) of the Acquisition of Land Act 1981 – name and address</i>			
Network Rail (NR)	X		Progressing the sale contract, with acquisition expected to be completed before Christmas
Doxey Road Limited	X		Sale contract completed
Friends Life Limited	X		In dialogue to remove objection
Key Property Investments (KPI) Number Two Limited	X		Sale contract completed
<i>Other qualifying persons under section 12(2A)(a) of the Acquisition Of Land Act 1981 and under Section 12(2A)(b) Of The Acquisition Of Land Act 1981</i>			
Western Power Distribution (WPD) (West Midlands) PLC	X		The County Council have placed orders for the necessary diversions identified by WPD and transferred funds accordingly. It is understood that the objection is to protect WPD rights to maintain apparatus installed in the new highway prior to its adoption and that WPD will require a legal agreement to secure such rights.
Wickes Building Supplies Ltd	X	X	In dialogue to remove objection
Lidl UK	X		In dialogue to remove objection

Benefit Realisation

The key objectives of the Stafford Western Access Route that need to be realised are as follows:

- Provide high quality transport infrastructure required to deliver development in Stafford
- Reduce congestion on routes into and around the town centre which act as a constraint on growth proposals
- Facilitate improved access by sustainable modes between housing growth areas and the town centre

These will be achieved by delivering the benefits summarised in the Appraisal Summary Table in Appendix 1. The quantified benefits have been assessed over a 60-year project lifetime. Benefit Realisation proposals will be developed as the scheme progresses.

11. Timetable

The key milestone for 2017/18 is the acquisition of land. The overall milestones are summarised in Table 9.

Table 9: Key Milestones 2017/18 Onwards

Activity	Start	Finish
CPO process (with inquiry)	September 2016	November 2018
Construction – major works (CPO with inquiry)	November 2018	December 2020

12. Author

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13. Decision details

For official use only – details of date considered by SSLEP Executive Group and any additional information for decision record.

Appendix 1: Appraisal Summary Table

APPENDIX 3.1: APPRAISAL SUMMARY TABLE

Date produced: May 2016

Contact:

Name of scheme:		STAFFORD WESTERN ACCESS ROUTE				Name	Nick Dawson		
Description of scheme:		New highway required to deliver development in Stafford. The road is a 7.3 metre wide, two lane, single carriageway road, approximately 1.2km in length between Martin Drive, Doxey Road and A34 Foregate Street.				Organisation	SCC		
						Role	Promoter		
Impacts		Summary of key impacts		Assessment					
				Quantitative		Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp	
Economy	Business users & transport providers	The scheme generates large overall benefits for business users from travel time and vehicle operating cost savings. These are slightly offset by the increased delays to business users during construction of the scheme valued at £765,249 (MSBC 2015). Potential additional inter-peak benefits equate to £17.1m for all users (MSBC 2015).		Value of journey time changes(£000's)		£37,656	-	£32,231,000	Moderate Beneficial
	Net journey time changes (£000's)								
	< 2min			2 to 5min	> 5min				
	£2,260			£20,334	£15,062				
	Reliability impact on Business users	The introduction of the new route and the resultant reduction in congestion through the town centre would improve the Business Users reliability through Stafford due to a reduction in flow break-down. (based on 2015 MSBC)		-		-	£5,490,050		
Regeneration	Stafford has a relatively small scale of deprivation and the scheme is likely to provide most benefit to a relatively confined area. It is therefore not appropriate to consider Stafford as a regeneration area.		Not assessed		-	-			
Wider Impacts	The level and type of benefits does not meet the requirement for a quantified wider impact assessment. The scheme directly unlocks 2,200 houses and Doxey Road regeneration scheme. This will support around 9,500 direct (construction), indirect (suppliers providing goods, services and materials) and induced (supported by increased spending) jobs. These new homes will also contribute around £22m in additional taxes (local and national) and around £60m increased spend in local shops and services.		Not assessed		-	-			
Environmental	Noise	The monetary assessment is based on the 2015 MSBC which identified a slight adverse impact. A more detailed noise assessment was completed for the planning application in June 2015 which confirms this conclusion.		Total population assessed in 2033 = 3,101; people annoyed without scheme = 1,039; people annoyed with scheme = 1051. Net increase of 12 people annoyed in long term with scheme. (based on 2015 MSBC)		-	£-399,648	Slight Adverse	
	Air Quality	The monetary assessment is based on the 2015 MSBC which identifies a slight adverse impact. The assessment completed for the planning application confirms this. The scheme does not result in any exceedances of air quality criteria, and additionally there are no Air Quality Management Areas affected by the scheme.		Assessment Score PM ₁₀ :+32, NO ₂ : +163, Emissions NO _x : -11 tonnes (based on 2015 MSBC)		-	PM ₁₀ NPV:£1.54m, NO _x emissions NPV: £0.006m. Total: £1.55m	Slight Adverse	
	Greenhouse Gases	The planning application for the scheme confirms the low impact of the scheme on greenhouses gases		Change in non-traded carbon over 60y (CO2e)		527 tonnes (2015 MSBC)	-	£-32,886	
	Change in traded carbon over 60y (CO2e)			0					
	Landscape	The landscaping scheme was updated as part of the planning application process. Loss of wet woodland will be compensated by additional planting. Benefits will be gained from a new wildlife habitat adjacent to the SSSI. There will be sensitive landscaping along the route include low maintenance native species. There will be no impact on levels of tranquillity in the area.		-		Slight Beneficial	-		
	Townscape	The assessment has been reviewed as part of the planning application process. The 16 historic buildings in the area will not be directly impacted. The route diverts traffic away from locally distinctive traditional terraced houses at Castletown. The height of elevated sections will not adversely affect the townscape. During scheme operation, there will have no impact on Foregate & St.George's Conservation Areas and Victoria Park.		-		Neutral	-		
	Historic Environment	The assessment has been reviewed as part of the planning application process which concludes that an Archaeological Strategy should be completed due to the unknown level of remains, including a Level 2 Building Recording of the undesignated Universal factory. There will be a reduction in traffic in the Conservation Area. Impact on the SSSI water meadow and dismantled railway lines is neutral. It is considered that the potential for an adverse impact is low and mitigation will be delivered if appropriate.		-		Slight Adverse	-		
	Biodiversity	All habitats and species have been evaluated as part of the EIA. A small area of willow carr woodland and an area of destroyed SSSI will be affected. In response, a restored area of SSSI and the flood compensation area in the SSSI will both provide habitat improvements. Five year post monitoring of birds is proposed; a swamp habitat is included in restoration proposals; Saint Gobain bat boxes will be replaced; a toad and mammal tunnel created; and new lighting will reduce light spill. Construction activities will be managed appropriately.				Neutral / Slight beneficial	-		
Water Environment	The assessment has been reviewed as part of the planning application process. There will not be an adverse impact on water resources with restoration of part of the SSSI having a positive effect by allowing more rain water infiltration. Flood modelling shows that the proposed flood compensation area will result in a reduction of properties at risk of flooding. With appropriate mitigation, contamination is not expected to have an impact, however additional ground investigations will continue.		-		Neutral				

Social	Commuting and Other users	The scheme generates large overall benefits for commuter and other users from travel time savings as a result of the scheme. These are slightly offset by an increase in vehicle operating cost and delays during the construction of the scheme.	Value of journey time changes(£000's)			£84,926	-	£84,574,000	Moderate Beneficial
	Net journey time changes (£000's)								
	<2min	2 to 5min	> 5min						
	£5,096	£45,860	£33,970						
	Reliability impact on Commuting and Other users	The introduction of the new route and the resultant reduction in congestion through the town centre would improve the Commuting and Other Users reliability through Stafford due to a reduction in flow break-down. (based on 2015 MSBC)				-	-	£10,728,985	
	Physical activity	The additional number of pedestrians and cyclists is expected to be insignificant as a result of new walking and cycling facilities along the access route. However, complimentary sustainable measures are likely to encourage additional walk and cycle journeys.				-	Neutral	-	
	Journey quality	The assessment has been reviewed as part of the planning application. Frustration will be reduced as road layout, geometry, network conditions and ability to make good progress are all better with the new route, with reduced fear of accidents. There will be more open views along the new route.				-	Large Beneficial	-	
	Accidents	The introduction of the scheme is forecast to reduce personal injury accidents across the study area by around 8 across the 60 year appraisal period. (based on 2015 MSBC)	Accident / Casualty Savings (over 60 year appraisal) PIA's = -8, Fatal Casualties = 1, Serious Casualties = 5, Slight Casualties = -9			-	-	£1,798,000	Moderate Beneficial
	Security	Existing routes in the town are well lit with CCTV and good informal surveillance. New route will be designed to a high standard as regards security with good informal surveillance as passing through existing residential and retail areas.				-	Neutral	-	-
	Access to services	The scheme does not include any proposed improvements or alterations to bus services. However the new road will facilitate better bus penetration of new housing sites and improve bus access to the town centre, complemented by wider sustainable transport measures.				-	Neutral	-	-
Affordability	There will be vehicle operating cost (VOC) savings for all users equating to £5.688m. The majority of residents will experiencing no change in VOCs.				-	Slight Beneficial	-	Moderate Beneficial	
Severance	The assessment has been reviewed as part of the planning application. There is moderate relief from severance on Chell Road and Doxey Road. Crossing facilities will be provided where new severance has been identified as a result of increased traffic flows. This includes A34 Foregate Street, A518 Castle Bank, West Way, A518 Newport Road (West Way to Kingsway) Kingsway and locations along the SWAR.					Moderate beneficial	-	Moderate Beneficial	
Option and non-use values	This scheme will not create a step change in the service level of a transport mode therefore has not been assessed.	Not assessed			-	-	-		
Public Accounts	Cost to Broad Transport Budget	The scheme will be publicly funded mainly through the LEP Growth Deal and a local contribution from the County Council. There will be broader maintenance costs of £267,000. There will also be a £15.4m private funding contribution.				-	-	£46,747,000	
	Indirect Tax Revenues	The scheme leads to reduced vehicle operating costs, as people use the shorter link road route. This feeds through to an overall decrease in indirect tax revenues.				-	-	-£132,000	



Stafford Western Access Route

Environmental Statement Non-Technical Summary

June 2015

Stafford Western Access Route

Non-Technical Summary of the Environmental Statement

June 2015



Introduction

The Environmental Statement

This document is the Non-Technical Summary of the Environmental Statement for the proposed Stafford Western Access Route herein referred to as 'the Scheme'.

An Environmental Statement (ES) is a detailed report of the findings of an Environmental impact Assessment (EIA) of a proposed development. It describes the existing environmental conditions and then predicts the effects of the Scheme on both the man-made and natural environment. The ES also gives detail of the measures proposed to reduce any negative impacts of the Scheme on the environment.

The ES is issued in accordance with EC Directive 85/337 (as amended by Directive 97/11/EEC) as applied by Section 105a of the Highways Act 1980, as amended.

The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended 2015) requires that for certain developments an EIA is undertaken. In some cases, owing to a development's type or scale, an EIA is mandatory (Schedule 1). In other cases developments that do not meet the threshold of a Schedule 1 application may still require an EIA owing to their potential to give rise to significant environmental impacts (Schedule 2).

The Scheme falls beneath the threshold for a scheme under which a Schedule 1 application is required however as the Scheme may impact on a series of environmentally sensitive sites, in particular Doxey and Tillington Marshes Site of Special Scientific Interest (SSSI) and the functional floodplain of the River Sow. Staffordshire County Council have commissioned this EIA on a voluntary basis

We would welcome your comments on the Scheme. If you would like to view the complete ES, it is available to be viewed free of charge at the location listed at the end of this document.

The Proposed Scheme

Staffordshire County Council is seeking planning permission for development within the red line boundary (SWAR/PLANNING/02):

- Construction of new highway from Greyfriars Place to Doxey Road and Doxey Road to Martin Drive;
- Associated demolition of buildings at Saint Gobain; and
- Associated flood compensatory storage within Doxey and Tillington Marshes (SSSI).

The Highway Authority is permitted to carry out improvements within or adjacent to the existing local highway and therefore does not require planning permission for the areas within the blue line boundary (SWAR/PLANNING/02). This is in accordance with the Town and Country Planning (General Permitted Development) (England) Order 2015. This includes improvements and re-alignment of:

- Existing Doxey Road between West Coast Main Line and Castle Street, including provision of a new service road; and
- Greyfriars Place to A34 Foregate Street and along A34 Foregate Street to Browning Street.

The Scheme objectives are as follows:

- To provide high quality transport infrastructure required to deliver development in Stafford;
- Reduce congestion on routes into and around the town centre which act as a constraint on growth proposals; and
- Facilitate improved access by sustainable modes between housing growth areas and the town centre.

The Scheme will afford relief to Newport Road (east of Kingsway), Station Road, Chell Road, Foregate Street (south of the scheme) and Doxey Road. Although traffic is predicted to increase along some routes, overall performance of the local highway network will improve.

The Scheme will help to accommodate future development traffic in Stafford and, in particular, it will improve the access arrangements to proposed development sites in the West of Stafford that are included in the Adopted Local Plan. It will also enable the removal of through traffic from the town centre, creating improved conditions for bus services, pedestrians and cyclists and opening up further opportunities to provide complementary sustainable transport measures within and to the town centre.

The Scheme is illustrated in SWAR/PLANNING/05.

The new route will be a 1.2km, 7.3m wide, single carriageway road, between Martin Drive and A34 Foregate Street. It will be provided with a 3m wide shared footway/cycleway, good quality signage, lit to current design standards and subject to a 30mph speed limit. Key features of the Scheme include:

- A34 improved signal junctions at Browning Street and Foregate Street;
- New bridge over the River Sow;
- Viaduct over the River Sow flood plain;
- Complementary habitats created adjacent to the new road and Doxey and Tillington SSSI;

- New roundabout at the junction with Doxey Road and Sainsbury's;
- Service road for Doxey Road properties;
- Realignment of Doxey Road;
- Enhancements to the West Coast Main Line rail bridge;
- Roundabout at new junction with Doxey Road;
- At-grade crossing of redundant rail sidings;
- Fourth arm at existing Martin Drive junction; and
- Flood compensation area within Doxey and Tillington Marshes SSSI.

Construction

The scheme will be delivered in three sections as shown on drawing SWAR/PLANNING/07:

Section A: A34 Foregate Street to Timberfield Road/Doxey Road Junction (approximately 700 metres)

Section B: Along Doxey Road from Timberfield Road up to and including Doxey Road Rail Bridge (approximately 160m)

Section C: Doxey Road (west of the Rail Bridge) to Martin Drive, Castlefields (approximately 320 metres)

The anticipated construction period for Sections A and B is April 2016 to December 2017 and Section C is expected to be completed by September 2018 in association with an early phase of new housing. This has been based on Stafford Borough Council's Local Plan housing projections.

Environmental Effects

The impact of the proposals has been considered for both the natural and man-made environment. The Scheme design aims to avoid impacting on the local environment as far as it is practical to do so. Measures have also been included in the Scheme design to make improvements to the local environment where this is possible. The following sections summarise the environmental impacts, both positive and negative, and indicate the proposals to manage and improve the environment around the Scheme.

Construction Effects

During construction, impacts would initially result from vegetation clearance where tree removal is required leading to habitat loss. In addition, the Scheme will require the demolition of the non-designated Universal Factory (Saint Gobain) office building on Doxey Road, and an area of site designated for nature conservation, already subject to damage, will be permanently lost with replacement and enhancement provided as part of the Scheme.

Environmental effects that can occur during construction of a scheme of this scale could include:

- Construction noise and vibration;
- Generation of dust;
- Deposition of mud on roads;
- Accidental spillage of fuels, oils or other materials;
- Visual intrusion;
- Impacts on ecology and cultural heritage features;
- Driver Stress; and
- Severance and travel times for pedestrians and cyclists.

These have been considered in detail as part of the EIA, of which details follow in the sections below. Construction environmental impacts will be controlled and minimised through good site practice and dedicated environmental management, including a Construction Environmental Management Plan (CEMP). Areas of land required temporarily during construction would be returned to original use or landscaped after completion of construction. Throughout the construction works, liaison would be undertaken with the relevant authorities and local residents to keep them informed of the planned activities and respond to any comments and queries which arise.

Mitigation measures required to offset the impact of delays to drivers during construction are provided in the Vehicle Travellers Chapter.

Operational Effects

Upon completion of the Scheme, the new road will open to the public for general use.

Environmental effects that can occur from traffic flow changes during the Operation of a road scheme of this scale include:

- Potential for consequence to noise and air quality;
- Effects from routine maintenance / management practices, including landscape and vegetation management;
- Potential light spill from new road lighting;
- Impacts on landscape; and
- Journey quality for all road users.

These have been considered in detail as part of the EIA, of which details follow in the sections below. Environmental impacts of scheme operation will be controlled and minimised by design and incorporation of mitigation measures identified during EIA. Effects have been predicted and then measures put in place to remove or reduce the impact wherever possible.

Ecology and Nature Conservation

Ecological resources that have been considered as part of the Ecology and Nature Conservation assessment include Doxey and Tillington Marshes (SSSI). A small area of the existing SSSI would be permanently lost to accommodate the Scheme. Most of this is, however, currently classified as destroyed and is occupied by a car park. The Scheme provides the opportunity to restore this destroyed SSSI, and adjacent land, to habitats complementary to Doxey and Tillington Marshes SSSI. The proposed Flood Compensation Area will also provide habitat improvements to the SSSI.

Restoration, as agreed in principle with the Environment Agency and Staffordshire Wildlife Trust, will be a mix of wet woodland and scrub with associated swamp and ditches using the existing SSSI habitats as a template for restoration. The area of restored and new habitat created would be at least equivalent to that permanently lost as a result of the Scheme, culminating in a neutral/ minor beneficial effect on the habitats of Doxey and Tillington Marshes SSSI once planting has matured.

Construction will entail minor impacts on SSSI habitats adjacent to the route and the proposed Flood Compensation Area. Impacts will be minimised through adherence to good working practices and fully mitigated through habitat restoration. During Construction, noise from the road building works is likely to disturb breeding and wintering birds within the SSSI. This will be minimised through artificial screening/fencing and by timing works to avoid the most sensitive periods wherever possible. These effects will be a temporary during construction only. No significant operational adverse effects on the SSSI have been identified. Nevertheless, due to the uncertainties associated with the assessment of noise impacts of different bird species, a 5 year post construction monitoring of the SSSI breeding and wintering bird populations is proposed.

Other habitats and protected species outside of the SSSI have also been evaluated including aquatic, broadleaved woodland, poor semi-improved grassland, swamp, broadleaved plantation, bats, breeding and wintering birds, badgers, amphibians and reptiles. Replacement planting, additional grass verges, a Sustainable Drainage System (SuDS) and the inclusion of swamp habitat in the restoration proposals of the destroyed area of SSSI have been incorporated into the design to offset habitat loss in the long term. The bat boxes removed in the demolition of the buildings within the Saint Gobain site will be replaced as part of the proposals.

Construction activities will be managed to avoid light spill and disturbance to protected species through a CEMP and precautionary working approaches. In particular, timing of the works would avoid the most sensitive periods wherever possible. Measures have also been proposed to mitigate operational effects on protected species. For example, a toad and mammal tunnel located at the disused rail bridge (SJ 915 234) has been incorporated into the design to allow animals to cross the road safely during operation of the Scheme and new lighting will be fitted with flat glass to reduce light spill.

In summary, the Scheme has been designed to avoid or minimise impacts on ecological resources and measures have been proposed to reduce, mitigate and offset ecological impacts both during construction and operation of the Scheme. With these measures in place there would be no residual significant adverse effects and it is anticipated that the Scheme will have a positive impact on SSSI habitats and an overall neutral effect on protected and priority species.

Drainage and the Water Environment

The assessment of drainage and the water environment considers the effects to all rivers, streams, drainage ditches, and groundwater likely to be effected by the Scheme. This process shows that the construction and operation of the road would not result in any adverse impacts on the water resources of the local area.

The design of the proposed highway drainage systems, new culverts, channel diversions and floodplain compensation will be in accordance with the Design Manual for Roads and Bridges (DMRB) and Environment Agency consultation. Construction of the Scheme would be carried out under the control of a CEMP, to ensure compliance with current planning policies/regulations for the protection of water resources.

The breaking up of the car park and restoration of the area to marshland is considered to be a positive effect from the Scheme as it will allow more infiltration of rainwater in an area of marshland SSSI. A flood compensation area is proposed located within Doxey and Tillington Marshes SSSI around 2km northwest of the Scheme adjacent to the River Sow. Flood modelling was undertaken to assess the flood risk associated with the Scheme and the proposed flood compensation area. The results show a net (although small) reduction of properties at risk of flooding.

Landscape and Arboriculture

The Scheme utilises a combination of brownfield land, existing highway alignments and the southern fringes of open space associated with the meandering route of the River Sow and with the Doxey and Tillington Marsh SSSI.

During construction, significant landscape effects are limited to the Ancient Clay Farmlands which borders the Scheme immediately to the north and encompasses Doxey and Tillington Marshes SSSI. With the addition of woodland planting this would be diminished by the time the Scheme is in operation.

Of seventeen representative viewpoints used to assess the visual impact on the Scheme, eleven would not experience views of the Scheme. In the first year of operation viewers at four locations would experience a slight adverse effect, and the remaining viewpoints will experience a neutral or slight beneficial effect. With the use of landscaping and mitigation after 15 years of operation the impact of the works would be further reduced.

There are a number of mature trees (20-40 years old) located close to Doxey Road and adjacent to the River Sow. Where possible these would be retained, if removed compensatory planting would be required.

The Scheme would not result in significant harm to landscape or visual amenity within the study area and the urban edge of Stafford and there would be some beneficial effects on landscape and townscape character as a result of redevelopment of areas of derelict land and introduction of structure planting.

Cultural Heritage

The assessment of Cultural Heritage has considered archaeological remains, historic buildings, and the historic landscape.

Archaeology

While there are no designated archaeological heritage assets recorded within the area of the scheme or the surrounding vicinity, several areas of archaeological potential were identified on the site and the scheme has the potential to directly impact on archaeological assets. It has been agreed that the appointed archaeological consultant will prepare an Archaeological Strategy to detail the scale of archaeological works and the methodologies, standards and guidance to be followed. This Strategy will be prepared in close consultation with the County Council's Principal Archaeologist and, where appropriate the Historic England Regional Science Advisor for the West Midlands.

Built Heritage

There are sixteen designated historic building assets within the study area. The majority of these assets will not be directly impacted by the proposed scheme and indeed, the improved traffic flows may result in a reduced impact on the designated historic buildings and their setting during the operation of the scheme. However, the cultural heritage assessment has indicated two 19th century structures (a brick bridge and a brick sluice) which might experience a slight adverse impact following mitigation. The undesignated Universal Factory (Saint Gobain) complex on Doxey Road will be demolished as part of the Scheme; this significant impact will be mitigated through the preparation of a detailed Level 2 Building Recording in advance of any dismantling works. The details of this study will be contained within the Archaeological Strategy.

Two designated Conservation Areas (Foregate and St. George's) are classed as receptors of high importance. During construction works there may be a slight adverse effect upon the historic character of these areas, however, it is considered that once the Scheme is complete, changes in traffic flow and overall traffic volume may result in a slight beneficial effect on these sensitive areas of historic character.

Historic Landscape

The Scheme extends across six Historic Landscape Character Areas (HLCA) with a seventh (Victoria Park) lying immediately to the southeast of the Scheme. The Scheme is anticipated to have a slight adverse effect on the Doxey Marshes and Sow Valley HLCAs and a slight beneficial effect is anticipated at Victoria Park as a result of reduced traffic congestion in the town centre. No further effects are anticipated to HLCAs.

Noise and Vibration

During the construction works, noise will be generated by the operation of plant and activities such as vegetation clearance and excavation works. Good practice measures and temporary noise barriers will be adopted to alleviate construction noise to nearby residential properties; however, residual construction noise is

anticipated to be above thresholds for short periods of time in the immediate vicinity of the works.

The operation of the Scheme will have a limited effect on road traffic noise levels, with negligible increase in noise across the majority of the Scheme. Several properties are anticipated to experience an increase in noise levels as a result of the Scheme.

Geology, Soils and Contamination

For the most part the Scheme would be constructed on Glaciofluvial Sheet Deposits (Sand and Gravel) or Alluvium (Clay, Silt, Sand and Gravel). Peat deposits are also confirmed across the development area. It is considered that the superficial deposits are unsuitable for the foundations of the proposed viaduct and there is a potential compressibility and settlement risk that could occur following construction of the embankment on the peat deposits. Piles are therefore required for the construction of the Scheme.

On the basis of soil sampling and consideration of the past and present land uses of the area, there is low potential for encountering contaminated land on site, however further soils testing and ground gas monitoring will be undertaken prior to construction and appropriate remedial measures put in place if necessary.

Waste Management issues will be considered as part of a Site Waste Management Plan (SWMP, Appendix 2.3 of Environmental Statement), which would be developed prior to construction by the appointed contractor. Although a SWMP is not a statutory requirement, it follows best practice and ensures waste issues are dealt with in an appropriate and sustainable matter.

Air Quality

The demolition activities associated with the construction of the Scheme have been identified as a potential air quality issue. With the application of good practice construction control measures it would be possible to reduce the impacts of dust at all potentially sensitive receptors e.g. local residential properties. Overall with these measures in place the works should not have a significant effect on human health or Doxey and Tillington Marshes SSSI.

An air quality assessment has been carried out based on modelled traffic data. The results show that emissions of CO₂ within the Scheme in the opening year. However, the operational phase of the proposed Scheme is expected to have a negligible to slight beneficial impact on human health and the pollutant concentrations would be below air quality criteria. It can be considered that the Scheme would not have a significant effect on air quality.

There would be an increase in concentrations of nitrogen oxides and nitrogen deposition rates in a zone of the SSSI adjacent to the road as a result of the Scheme. The habitats affected by raised levels are, however, not thought to be highly sensitive to increase in nutrient levels; therefore the increase predicted is not expected to result in a significant adverse effect.

Pedestrians, Cyclists, Equestrians and Community Assets

The impacts on these users have been considered in terms of journey length, amenity and severance for the forecast years of 2018 and 2033. The study area does not contain a known horse culture and the urban character is unlikely to be attractive to equestrian users.

During construction there will be two pedestrian diversions resulting from the temporary closure of footpath 46 and on the Doxey Road adjacent to Castletown which will have a slight negative impact. Scheme construction is not expected to require any further pedestrian and cyclist diversions.

Once the scheme is built, the new route between the Doxey Road and Foregate Street will provide small journey length benefits for over 1700 households when travelling to Madford Retail Park and the adjacent area. A number of roads will experience increases in traffic flow that will cause severance for pedestrians crossing the road. New pedestrian and cyclist crossing facilities will be provided to mitigate this impact although slight residual negative impacts will remain. An increase in traffic flows will also lead to a reduction in amenity in terms of noise, dirt and exposure to traffic. Mitigation cannot be provided in an urban environment as pedestrians and cyclists need to travel alongside the road to access homes, services and facilities and to provide informal surveillance. Mitigation is not available for noise and landscape quality impacts to the level of amenity for users of the Isabel Trail and footpath 46.

The scheme will provide pedestrian and cycle facilities along the route and provide safer connections to the National Cycle Network on the Doxey Road.

Vehicle Travellers

The Scheme has been designed to help accommodate future development traffic and reduce congestion in the town centre as part of a wider package of measures outlined in the Stafford Borough Integrated Transport Strategy.

The Scheme is anticipated to reduce driver stress on the wider local highway network. Drivers will experience enhanced views of the Doxey and Tillington Marshes SSSI with open views of the marshes along the whole route. High quality signage and road layout will be an essential part of the Scheme to avoid driver frustration and fear of accidents.

Drivers will experience some delay during parts of the construction period, and mitigation measures will be put in place to help offset the impact of these delays.

Planning Policy

The Scheme has been identified as key infrastructure in the new Local Plan to 2031 – ‘The Plan for Stafford Borough’ that was adopted in June 2014. The Scheme is specifically required to deliver Policy Stafford 1 – Stafford Town and Policy Stafford 3 – West of Stafford.

Consideration has been given to key national and local planning policy guidance. The Scheme has been designed, where practicable, to avoid or minimise environmental impacts through mitigation measures in accordance with policy.

Summary of Environmental Effects

The table provided on the following page summarises the specific environmental effects of the Scheme proposals relating to the environmental constraints.

Environmental Effects Summary Table:

Environmental Aspect	Potential Impacts	How the Effect Would be Reduced	Long Term Effect on the Environment
Ecology and Nature Conservation	Habitat loss including Doxey and Tillington Marshes SSSI, Aquatic Habitats, Broadleaved Woodland, Poor Semi-improved Grassland, Swamp, Broadleaved Plantation.	Unnecessary disturbance and loss of habitats is to be avoided. In addition, effected habitats would be replaced and restored where practical.	With these measures in place a beneficial impact is anticipated for all assessed habitats with a moderate beneficial effect anticipated to Doxey and Tillington Marshes SSSI.
	Potential disturbance to and injury/death of protected species during construction and operation of the Scheme.	To avoid disturbance to and injury/death of protected species construction activities will be managed through a CEMP and precautionary working approaches. Specific measures have also been proposed to mitigate operational effects.	With the mitigation measures in place a neutral effect is anticipated on protected species.

Environmental Aspect	Potential Impacts	How the Effect Would be Reduced	Long Term Effect on the Environment
Drainage and the Water Environment	Drainage and the water environment will be modified as a result of the Scheme. Realignment of Broad Meadow Drain and excavation of the flood compensation area has the potential for a slight to moderate adverse effect on surface water quality.	Site specific methodologies would be put in place for the realignment of Broad Meadow Drain, reproofing of Doxey Drain, and the placing of excavated material within Creswell Flash. The construction of a flood compensation area and the addition of SuDs will be included where practicable.	There would be no adverse effects to local water resources during construction or operation. The reinstatement of an area of marshland is considered to be a positive effect as a result of the Scheme with regards to groundwater.
Landscape	Landscape character and views would be modified through the removal of vegetation and the introduction of the new road layout.	Impacts on landscape character would be minimised through landscaping measures which will include woodland and semi-ornamental tree and scrub planting. This will partially screen views of the Scheme.	No significant adverse effect on landscape or visual receptors. A beneficial effect on the landscape/ townscape character is expected as a result of the redevelopment of areas of derelict land and the introduction of structure planting.
Cultural Heritage	Archaeological assets have been identified within the study area and further archaeological remains may be present within the site. There are a number of heritage receptors in proximity to the works with Universal factory and two 19 th century structures	A detailed archaeological strategy and phased programme of archaeological investigation as well as supervision of works by an archaeologist would be utilised where appropriate. Fencing off of effected historic buildings. Landscaping of the Scheme will provide	A slight adverse effect on archaeological and heritage receptors would be expected to remain. Works are anticipated to have a slight beneficial effect to Victoria Park and a number of historic buildings.

Environmental Aspect	Potential Impacts	How the Effect Would be Reduced	Long Term Effect on the Environment
	(a brick bridge and possible brick built sluice) experiencing potential adverse effects.	some screening as vegetation matures.	
Noise and Vibration	Increased noise levels affecting residential properties during construction works and operational road traffic.	Temporary noise barriers and best practise working methods to be detailed in a CEMP. No additional measures are proposed for noise levels during operation.	The majority of residential areas are predicted to experience negligible increases in noise levels; however, some receptors will experience minor to major increases in noise levels as a result of increased traffic flows. A number of properties are expected to experience a decrease in noise levels.
Geology, Soils and Contamination	There is potential to encounter contaminated land. This could lead to the contamination of landscaping areas and the dieback of vegetation. Works have the potential to result in the reduction in ground water and surface water quality.	Extensive ground investigation works and testing has been undertaken predominantly in the central and western areas which is currently being reviewed to inform detailed design and quantitative risk assessment. Good practice guidelines will be followed throughout construction. Design of drainage system will minimise effects of spillage during operation.	All potential adverse effects are reduced to negligible following mitigation.
Air Quality	Demolition and excavation activities associated with	Good practice guidelines and a Dust Management Plan will be utilised	There will be a negligible to slight beneficial effect to local residents. An

Environmental Aspect	Potential Impacts	How the Effect Would be Reduced	Long Term Effect on the Environment
	construction of the Scheme are expected to produce large amounts of dust. Potential increase in road traffic emissions during operation.	during construction. No mitigation measures are proposed for road traffic emissions.	increase in NOx concentrations and nitrogen deposition rates at the SSSI is anticipated. However, as the area of SSSI affected by nitrogen deposition supports scrub and fen habitats which are not considered to be highly sensitive to increases in nitrogen levels the effect is not considered significant.
Pedestrians, Cyclists, Equestrians and Community Assets	Slight reduction in journey length when accessing Madford Retail Park. Positive and negative impacts on amenity at different locations. Creation of moderate or severe severance at 8 locations. Relief from severance at 5 locations.	A number of signalised and informal crossings are proposed along the scheme and affects roads to reduce severance by minimising delay.	Slight negative residual impact for severance as the delay and inconvenience to pedestrians and cyclists will still be more than at present with the mitigation in place. Amenity impacts in terms of noise, dirt and exposure to traffic will remain.
Vehicle Travellers	Views from the road will change as a result of the Scheme. Driver stress will change as a consequence of both the Scheme and the cumulative impact of significant housing and employment growth proposed	Landscape planting without restricting views from the road. Driver stress during construction will be mitigated through appropriate traffic management. The Scheme will reduce traffic flows on town centre	Views of the Doxey and Tillington Marshes SSSI will be opened up, providing a more pleasant driving experience long term. The Scheme will be delivered as part of a wider package of measures as proposed in the Stafford Borough Integrated Transport Strategy

Environmental Aspect	Potential Impacts	How the Effect Would be Reduced	Long Term Effect on the Environment
	<p>in the Local Plan.</p> <p>There will be higher 'driver stress' experienced without delivery of the Scheme.</p>	<p>roads.</p>	<p>2013 (to be delivered by 2033). This will help mitigate traffic levels which has been assessed as part of the evidence for The Plan for Stafford Brough</p>

Viewing the Environmental Statement

You can view the Planning Application and Environmental Statement free of charge during normal office hours from 09:00 until 17:00 at the following locations:

Staffordshire County Council
Stafford Western Access Route Design Team
Floor 3, Staffordshire Place 1
Tipping Street
Stafford
ST16 2DH

Online by following the link: www.staffordshire.gov.uk/westernaccess

A copy of the ES may be purchased in printed form for £100 or in digital form on a CD for £20, by writing to the above address. The Environmental Statement is available to view freely at the Staffordshire County Council Planning Department at the above address.

Your Views

Your views are important. If you wish to support, comment on, or object to the proposed development, you can write to Staffordshire County Council as part of the Planning Application consultation.

The information you send us may need to be passed to colleagues within the Council, or agents acting on our behalf. We will assume that you are content for us to do this. Please ensure that if you want your name or response to be kept confidential, you state this clearly in your response. Confidential responses may be included in any statistical summary of numbers of comments received and views expressed.

Prepared for:



Staffordshire County Council
Stafford Western Access Route Design Team
Floor 3, Staffordshire Place 1
Tipping Street
Stafford
ST16 2DH

By:



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For more information please contact:

Connectivity Strategy
Transport and the Connected County
Staffordshire County Council
No. 1 Staffordshire Place
Stafford
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Tel: 0300 111 8000

Email: transport.planning@staffordshire.gov.uk

If you would like this document in another language or format (e.g. large text), please contact us on 0300 111 8000 or email transport.planning@staffordshire.gov.uk

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Risk Identification					Current Assessment										Risk Management							Post Mitigation Assessment						
Nr	Title	Risk There is a risk that....	Cause	Consequence	Pre workshop/ workshop comment	Risk Category	Status	Likelihood	Cost	Time	Reputation	Objectives	Disruption	Current Risk Status	Management Actions Taken/ Update	Management Actions Planned	Cost of Mitigation £	Action Owner	Date By	Comments	Likelihood	Cost	Time	Reputation	Objectives	Disruption	Target Risk Status	
53	Underground obstructions	We may encountered unforeseen underground obstructions during ground works/ piling (not stats covered in other risk)	Previous land use	1. Delay to works 2. Cost for removing the obstruction or overcoming 3. Cost for delay		Physical conditions	Active	4	4	3				RED	Update 9/11/16 Some trial holes samples completed	1. Geotechnical hazard mapping to be completed 2. Undertake further trial holes to determine existing foundation type (Pans Drive) 3. Allow in programme to remove obstructions so as to avoid delay 4. Develop solution to work around the obstructions		1. Josh 2. Gavin 3. Gavin 4. Josh and lain	1. End Dec 16 2. Feb 17 3. Aug 18 4. April 17		2	3	2	0	0	0	AMBER	
32	Flooding	Flooding affecting progress - site or compound may be experience for longer than the 6 weeks allowed for in the programme and budget	1. Unexpected weather 2. Climate change	1. Delay to progress 2. Cost for standby of plant and ongoing prelim cost (piling rig stand by rates apply)	Assessed that there will be 6 weeks of flooding - in construction programme. Shutting the works.	Physical conditions	Active	3	4	3				ORANGE	Allowance provided for flood event during construction over and above the weather allowance provided in the Oct 2015 programme. 4 week allowance - includes prelim costs and 2 piling rig's standing time at £10,000 per week This includes client and contractor risk allowance that is to be separated out at a later date Additional 4 weeks added for Section C Update 9/11/16 1. Currently proposed compounds are not located within the flood zone 2. Obtain flood information and depths from the EA - completed	1. Explore ability to raise areas of material storage areas and agree by the EA 2. Programming flood sensitive operations outside winter months if possible		1. Gavin	1. Feb 18		2	4	3	0	0	0	ORANGE	
50	Compound area	Availability of preferred main compound area and agreement may not be reached with - St. Gobain	1. They may not be happy with our proposal to relocate them 2. Differences in opinion on land values	1. Alternative plot needed - if other side of the river. Increase in construction time to the site. 5k/week x 75 weeks for rental . Plus enabling works etc £100k, bailey bridge £200k. 2. Cost of rental of alternative which would be higher than land deal with Gobain	(675k)	Approvals	Active	3	4					ORANGE	Meeting with Saint Gobain 16/9/15. Awaiting land cost estimate from Saint Gobain for rental costs	Contingency plan. 1. Seek to rent the piece of land from St. Gobain - initial discussions commenced. (rent costs known). This would be similar cost to other site. Note closer to the site 2. If St. Gobain say no still sufficient time to find another compound (rent costs known)		1.Josh Moran	After Easter 2017	Still a 4 on cost. Minor saving of 300k for bailey bridge	3	4	0	0	0	0	ORANGE	
79	Tenpin - piling	Tenpin suffers serious structural damage as a result our pile driving activities - likelihood low	1. Pile driving is v close to the building 6m 2. Building is showing signs of instability	1. Stop works 2. May have to close Tenpin - temporarily and pay them compensation (6 weeks) 4. Rectify any damage 5. Change technique for the remainder of the works 6. Delay to change programme and change technique - bored piles 6. Negative effect on reputation <u>Min</u> - happens at the end of the programme. Minor delay, slight adjustment to method to do more slowly. Short closure of Ten Pin . 1 week = 100k. Extra week prelims 60k Total £160k <u>ML</u> - change to bored displacement method = +60k on existing technique. Happens 1 week after commencing. Redesign of slab. 4 weeks to remobilise . Slower output - 2-3 weeks extra @6weeks @60k Ten pin close for 1 week - 100k Cost for repairs - make good.300k. Total 660k Max	other risk for superficial damage nr 25	Design/ Technology	Active	2	5					ORANGE	Update: Foundation trial complete and results show the potential impact at Tenpin due to the proximity of the works. At Castletown, the results are illustrating nuisance levels. However, due to the age of the Castletown properties and their shallow foundations further migratory options are being reviewed through ECI. Driven piles remain favoured in this location. 03/08/16 update: Exploring options for bored piling at Tenpin, awaiting information back from supply chain	1. Review the vibration monitoring results to compare assessed against actual - completed 2. Undertake further analysis to determine potential impact - ongoing . Josh 3. Explore the supply chain for alternative techniques - completed 4. Undertake detailed property survey - done. Report expected end Nov. Josh 5. Carry out modifications to the design as maybe required - as and when. Josh 6. Explore insurance options - Alex. ongoing 7. Trial to be conducted of alternative technique - Josh/ Gavin 8. Trial of proposed mitigation for option A - for driven piling (cut off trench) Josh/ Gavin	Sum to be added to works cost for cut off trench. Case studies say it would be affected	Josh Moran	6. Prior to start of construction - Agu 18 7 & 8. Feb 17 5. March 17		2	5	0	0	0	0	ORANGE	
25	Adjacent structures	Construction e.g. compaction could have an unforeseen negative impact on adjacent buildings such as Tenpin, Lidl and Castletown frontages	1. Conditions of buildings may be worse than anticipated 2. Works create greater vibration than expected - compaction/ surfacing	1. Delay - stop 2. Rectify damage 3. Review methodology and process with adjusted methodology	Biggest risk around piling	Physical conditions	Active	2	4	3				ORANGE	To be revisited upon receipt of condition surveys and construction approach. Vibration and noise monitoring to be carried out whilst test piling. Further research into effects of vibration and noise from piling to be carried out as part of the vibration assessment Contractors also engaged regards vibration risk mitigation. Explore potential insurance policy 05/01/16 Update: Foundation trial arranged for February 2016; vibration monitoring to be completed and results reviewed. Initial assessment of vibration levels have been provided 22/04/16 Update: Vibration levels at Tenpin could be problematic see item 32. Further condition survey is required and remedial action needed prior to the start of construction. ECI is inputting into the ways in which vibration can be controlled at this location. Potential vibration levels at Castletown are classified as nuisance levels; however due to the condition and age of the buildings more detailed surveys are required ECI is developing control measures that could be employed. Update 9/11/16 1. Complete test pile works and vibration monitoring - completed 2. Complete & review vibration impact assessment - completed	1. Complete detailed property surveys and determine foundation types and depths - ongoing 2. Develop construction approach upon receipt of building condition surveys - not started 3. Complete background vibration monitoring surveys prior to construction - initial surveys done additional surveys to be completed prior to construction 4. Undertake periodic property surveys during construction 5. Carry out vibration monitoring during construction 6. Engage with affected property owners 7. Explore alternative design and mitigation options		1. Josh 2. Gavin	Apr.17		1	4	3	0	0	0	ORANGE	

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74	Network rail approvals - Doxey Road Rail Bridge	There is a risk that Network Rail may not accept the proposed works to Doxey Road Rail Bridge (surfacing and parapet)	1. NR perceive that there will be adverse effects on bridge	1. Redesign, cost of alternative solution likely to be neutral may be less . Cost of design balances from construction cost 2. Lower quality pedestrian and cycling facilities 3. CC may have to take ownership of the Bridget which would introduce additional maintenance costs to the council 4. Lower level of connectivity 5. Failure to meet to meet expectations of community 6. Negative effect on reputation	Approved in principle. Already consulted on this	Approvals	Active	2			4	4		ORANGE	Design submitted 07/03/16; NR requested further information which is to be supplied by 22/4/16 Update 9/11/16 1. Engaged with Network Rail and submit the design for approval - done	1. Chase formal sign off from Network Rail		Dave Wyrmer	Jan 17	Post mitigation risk would be closed	0	0	0			0	Closed
75	Working restrictions	There may significant complaints relating to noise disruption as a result of the works	1. Perception / Noise levels to residents	1. Reduce productivity / speed of works Reduce from 8-4 hours a day in the area near the residential area - extra 30 days 2. Cost for 5 weeks/6 weeks prelims plus cost of piling rig . Up to 500k	Working hours set out in planning conditions 8-4pm	Physical conditions	Active	2	4	3	4			ORANGE	Assume additional 2 weeks delay for piling - £50,000 prelims and £10,000p/w for piling 22/04/16 Update: ECI helping to inform the construction approach and how noise can be mitigated during the works. Machine manufacturers have been approached with some suggesting their new piling rigs can be much quieter. Further dialogue continues. 24/05/16 Update: Most likely: 2 week delay to piling works @ £36k/week. Plus cost of 2 rigs being required for 2 weeks longer. Best case: no effect. Worst case: 20% reduction in piling hours due to noise effects. Add 5 weeks (22 weeks total in programme). Plus cost of 2 rigs being required for 5 weeks longer. Add additional monitoring costs @ £k/week for 25 weeks. Added £20k to mitigation costs for noise monitoring. Update 9/11/16 1. Review planning conditions - completed can't start before 8am for noisy activity)	1. Complete test pile works and undertake noise monitoring - one done. One more to do 2. Working with supply chain to explore options 3. Continue stakeholder engagement with community to ensure they understand our methods and impacts		Iain Campbell /Richard Peers	1. Feb 17 2. Feb 17 3. Feb 17 and ongoing	Note mitigation will mainly deal with impact on reputation	2	4	3	3	0	0	ORANGE
61	Stage 3 safety audit	Additional requirements following stage 3 safety audit may be identified during the 12 month maintenance period	1. Unforeseen safety concern not picked up as part of the safety reviews during design 2. As built not matching drawings 100% 3. Unexpected use of	1. Retrofit changes 2. Design cost 3. Construction cost Up to £300k		Approvals	Active	4	3					ORANGE		1. Understand requirements from RSA2 - information expected before Christmas		1.Josh Moran		This will not reduce the risk.	4	3	0	0	0	0	ORANGE
65	Services clashes	Additional unforeseen services are encountered when we commence ground works at various interfaces with the existing road Service clash for new ducts, stats diversions and drainage	1. Surveys and records may be incorrect/ don't exist	1. Redesign or stats diversion 2. Cost 3. Delay Allow to happen at 3 locations (including in assessment)		Design/ Technology	Active	4	3	3				ORANGE	Clash analysis currently on-going Update 9/11/16 1. Review existing statutory undertakers drawings - done 2. Review location of proposed service ducts/piling - done	Mitigation 1. Ground radar survey to be done 2. Further trial holes in hot spots following the radar		Josh Moran	1. End Dec 16 2. End April 17		2	3	3	0	0	0	AMBER
48	Statutory undertakers	Stats may not delivery their work within the agreed programme Delays to construction as a result of statutory undertakers diversion/protection works	1. We have no control over stats works 2. External factors may affect their ability to do the work at the planned times	1. Delay 2. Cost for extended prelims	Might be able to work around	Inter-dependency	Active	3	3	3				AMBER	Provisional allowance made in construction programme of 5 weeks at Madford Retail Park Assume 6 week delay at £50,000 per week (based on Oct construction estimate) and standing time for piling rig at £10,000 p/w Stats diversions (particularly in piled areas) on critical path. Pre construction diversions will save time/cost. Opportunity for coordinated advance stats work particularly at Madford. 26/05/16 Update: Ongoing discussions with SU's regarding diversion work, C4 estimates received from all but STW. On-going discussions with Construction Team to review programming. DS to discuss potential advance works about Madford and elsewhere and arrange in June 2016 meetings with affected SU's to discuss programming. 6 weeks included for Section C	1. Engage early with statutory undertakers to determine diversionary requirements 2. Programme diversionary works as part of construction 3. Explore opportunities for early diversion works		Dave Singer			3	3	3	0	0	0	AMBER
60	Statutory undertakers diversions	Stats may increase the price they seek for diversions - either at C4 or following completion of the work	1. We haven't got a c4 estimate for the high voltage electricity assets 2. Stats may change their specs 3. Stats may change their designs/ plans 4. Work is based on estimate there may be unforeseens encountered during the	1. Cost increase in cost	Have risk as C4	Financial	Active	3	3					AMBER	Costs reviewed as part of the regular budget reviews. 26/05/16 Update - Due to timescales, will have to request up-to-date C4 estimates which might increase costs? Update 9/11/16 Share design information - completed	1. Engage utility companies - ongoing 2. Regular liaison with utility companies during design development - ongoing		Dave Singer		Post mitigation the same	3	3	0	0	0	0	AMBER
31	Weather	Adverse weather e.g. snow/ wind etc if encountered, could lead to significant disruption to progress of the works - over and above anticipated flooding and flood risk	1. Climate change	1. Claim from contractor 2. Delay		Physical conditions	Active	2	3	2				AMBER	4 week allowance provided in the Oct 2015 programme This includes client and contractor risk allowance that is to be separated out at a later date Additional 4 weeks added for Section C - £85,000 9/11/16 2. Utilise pre-cast solutions where the design permits - completed	1. Provide allowance in the scheme costs		Dean R. Sergeant			2	3	2	0	0	0	AMBER
37	Compensation	Part 1 claims for compensation could be greater than the estimates that have been provided - loss of amenity, value of houses	1. Stakeholders make stronger claims than initially estimated by the district valuation office	1. Increase cost - 10% increase in pot.150k	Exclude for capex contingency	Financial	Active	2	3					AMBER	20% contingency provided in land costs therefore not allowance provided in risk register Update 9/11/16 1. Obtain estimate for part 1 claims from DV - completed	1. Regular review of land cost estimate - ongoing - annually 2. Provide 20% contingency in land costs		Dean R. Sergeant	Dec 16		2	3	0	0	0	0	AMBER
57	Design changes	Significant changes to the design may be required following commencement of construction	1. Items missed in the design due to conflicts or buildability issues 2. Previous experience 3. Unforeseen items 4. Changes to standards NDS - NA	1. Possible delay to progress and associated increase in prelims (main item) 2. Change to design 3. Potential change in costs (could be a saving on original provision		Design/ Technology	Active	2	3	3	1			AMBER	03/08/16 Update: Detailed design substantially complete and drawings issued to contractor. Currently envisaged that there is sufficient time prior to construction starting to contractor to review thoroughly and amend if any issues are identified.	1. ECI during design development to limit scope and extent of design changes - ongoing 2. Engage with stakeholders (environmental, Castletown, Borough Council) to incorporate requirements into the design - ongoing		Josh Moran	1. Feb 17 2. Feb 17		1	2	3	1	0	0	AMBER

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70	Ground conditions	We may need to amend the geo tech design	1. Design based on expected ground conditions 2. Upon commencement of works ground conditions may differ locally	1. Delay (not on critical path) 2. Change to cost - could be up or down	Allowed 2-3 months for compaction/ settlement	Physical conditions	Active	2	2	3				AMBER	Allowance for soft spots Update 9/11/16 1. Complete and review ground investigation works - completed 2. Develop alternative design (lightweight fill, geogrid etc.) Not considered suitable	No further action possible Provision in contingency		Iain Taylor			2	2	3	0	0	0	AMBER
71	Ground conditions piling platform	Solution for piling platform may need to be changed - could be found upon commencement of piling Risk of unforeseen ground conditions and impacting on the piling platform design	GI completed on representative ground although not at every location	1. Increase in design 2. Cost increase 3. Delay to demob , fix and remob	Significant GI done to date	Physical conditions	Active	2	3	2				AMBER	Worse case assumes additional 500mm of material required for piling platform and extra 500mm of pile Update 9/11/16 1. Ground investigation works to inform pile platform design - completed	Management action 1. Testing on pile platform to determine bearing capacity - on completing of piling platform		Iain Taylor	Aug 18		2	3	2	0	0	0	AMBER
72	Contamination	Additional contamination may be found on site once ground works commence	1. Statistically although many samples taken from across the site there may be isolated additional 2. Brownfield site	1. Delay (depends on how serious the contamination is) 2. Cost to address the contaminated material	We know that there are areas of contamination	Physical conditions	Active	2	3	3				AMBER	Contamination to be allowed for in the target cost, this allowance is over and above that provided for in the construction estimate. Further assessment required following discovery of heavily contaminated material below car park. Also possible contamination from old landfill in area of 'wheel wash'? 22/04/16 update: Level of proposed slab raised to limit the volume of material off-site. Geo-environmental investigation continues alongside groundwater and surface water monitoring. Update 9/11/16 1. Undertake geotechnical risk assessment on volumes to be excavated - completed	No further mitigation actions possible only management actions 1. Geo-environmental to be present during excavation works - on plan 2. Control measures to be contained within the CEMP - to be done		Ian Taylor	1. Aug 18 2. Feb 18		2	3	3	0	0	0	AMBER
109	Rates	Sub contract tender rates may be higher than anticipated when the cost plan was being prepared . Inflation beyond estimated	1. Local buoyant market e.g.. Increase in demand for highways s/cs. 2. Material cost increase beyond expected values - asphalt 3. Strength of sterling v other currency - trading in dollars, link to oil prices	Cost increase		Financial	Active	2	3					AMBER	24/05/16 Update: inflation already included within budget, additional allowance here. most likely: allow 5% on value of sub-contract works best case: no effect Worst case: allow 10% on value of sub-contract works	1. Determine procurement route and place contract for main contract to secure fixed prices as soon as possible 2. Regular budget reviews to take place to track costs		Gavin and Ian	1. Summer 17 2. Quarterly		2	3	0	0	0	0	AMBER
86	Tenancy - SWLT and SCC	The timescales to agree termination of tenancy with SWLT may delay the programme	As a result of the opinion provided by Counsel on 08/1/16, there is a requirement to terminate the existing tenancy with SWLT in order for SCC to have sole possession of the land.	Even if happened we could use CPO Potential Negative effect on relationships with SWLT and Council		Approvals	Active	1			3			AMBER	22/04/16 Update: SWLT ratified to surrender their lease and Member decision required prior to agreeing the transaction. Decision form currently awaiting approval Update 9/11/16 Obtained Member approval to engage with SWLT and reach agreement	1. Engage with SWLT to obtain agreement to terminate the licence without serving notice - commenced. Final drafting of documents in process (Nov 16)		1. Dean R Sargeant	1. 10 Jan 17	Post mitigation risk would be closed	0	0	0		0	0	Closed
105	Accident	Accident on site	1. Availability of resources leads to personnel unfamiliar with working practice. 2. Insufficient training and supervision	1. Delay progress of the works 2. Change in methodology 3. Training of site personnel 4. Cost of delay		Project management	Active	1	1	1	3			AMBER	24/05/16 Update: Most likely: 1 day for toolbox talks / training Worst case: HSE close site for 2 weeks, prelims and worse cost Best case: no effect	1. Contractor to employ and adhere to safe working best practice 2. All site personnel to be inducted to site prior to starting work 3. Risk assessment and method statements to be prepared and adhered to 4. Regular toolbox talks to take place during construction 5. TM and diversion routes to be maintained with defective equipment replaced		Gavin and Ian	Apr.18		1	1	1	3	0	0	AMBER
82	Travellers	Occupation by travellers on the site during or immediately prior to the start of construction	History in the area and on the site Local tent residents	1. Delay 2. Legal costs		Stakeholders	Active	4	1	2				AMBER	Keyclamp fence has now been erected by SBC to reduce risk slightly. 24/05/16 Update: Most likely: effect of moving travellers - 2 week delay. Worst case 4 weeks, best case no effect	1. Work with local authority's to limited access to the site/car park area immediately prior to purchase/ or transfer of site 2. Secure the working area upon purchase/ securing the site 3. Provide allowance in the construction costs for delay		Josh Moran	Aug.18		3	1	2	0	0	0	AMBER
93	Groundwater mgt	Allowances for dealing with contaminated ground water (during construction) may not be sufficient following review by EA and confirmation of programme (i.e. quantity might also increase)	1. EA may not think our proposals adequately mitigation the negative environmental impacts 2. Method to deal with contaminated ground water varies seasonally. 3. If programme assumptions change we may have different quantities of ground	1. Increase in cost - additional treatment / pumping plant £5k/week for 12 weeks (1 season)	Currently have a nr of options	Design/ Technology	Active	3	2					AMBER	Slab levels of piled embankment raised in order to reduce the quantity of contaminated material to be disposed off site; this should also limit/reduce the requirement for pumping contaminated ground water during the works. Update 9/11/16 2. On site treatment unlikely to be cost effective (depending on volume). Tanking or permitted discharge to local sewer (to treatment works) likely most cost effective. Local Water company to be contacted for dialogue depending on volumes	1. GWRA to be completed to review likelihood -completed but review information pending 2. Review ground water monitoring results 2. Secure specialist advice on method and cost of dealing with contaminated water - and review against current allowance		1. Josh 2. Josh 3. Gavin	1. 20.Dec16 2. 20 Dec 16 3. April 17		2	2	0	0	0	0	GREEN
97	Mitigation for demolition of Saint Gobain	Additional mitigation required over and above that outlined in the CEMP for the demolition of Saint Gobain	1. Condition of building is worse than current understanding	1. Cost for additional measures and potential additional hazardous waste removal 10% on demo cost of £750) 2. Extension to those works / slow rate of demolition		Approvals	Active	3	2	1				AMBER	24/05/16 Update: additional demolition costs - disposal of material (contaminated). Update 9/11/16 Asbestos register provided. Contractor has priced it and seen the asbestos register so is reflected in price	1. Allowance to be provided in the risk register 2. ECI (including surveys) to inform the CEMP and control measures required		Gavin and Ian	July 17	Action will not reduce risk Update of costs expected in Summer 17	3	2	1	0	0	0	AMBER
99	Unrecorded structure	The material that has been used to fill the former underpass may be found to be of a unsuitable quality for the building of the embankment.	We are building on top of a filled in former vehicle underpass	1. Remove areas of poor standard material and replace 2. Cost 3. Not on critical path	Costs include to removal of part of the deck	Physical conditions	Active	3	2					AMBER	Contact Network Rail to establish any information they may hold. 26/05/16 Update - DAW to contact NR and request any drawing info on structure. Presumed soffit/deck to be removed and remains inspected to determine extent of works. Update 9/11/16 1. Engage with Network Rail to enquire if they have any details of structure - completed however information was of limited use 2. Assumption is made to reduce load to particular level	Management 1. Carry out investigation of structure on completion of land transfer and removal of rail siding		Dave Singer/Gavin M	April 18		3	2	0	0	0	0	AMBER
7	Japanese Knotweed	More Invasive species (e.g. Japanese Knotweed) may be found on site from that expected	1. Spreads through water/ air etc 2. Survey done in 2014	1. Cost to treat and dispose 2. Delay (potential)		Physical conditions	Active	2	2	2				GREEN	Detailed NVC surveys carried as part of EIA development. Further walkover surveys to be undertaken as appropriate - to be carried out by Mike Peile Detailed investigation into knotweed removal to be incorporated into construction cost Extents survey for knotweed completed in Oct 2015 Update 9/11/16 1. Extents survey of knotweed undertaken	1. Regular walkover surveys prior to start of construction - ongoing 2. Manage/control invasive species in accordance with best practice, the CEMP and SWMP		Josh Moran	Apr.17		2	2	2	0	0	0	GREEN

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9	Asbestos - Saint Gobain	Unknown extent of asbestos within the existing ground - St Gobain	Limited survey	Cost to remove		Physical conditions	Active	2	2					GREEN	GI chemical analysis confirms the presence of asbestos within the ground to the rear of Tenpin. Construction costs to incorporate disposal/treatment of known asbestos areas Method statements and risk assessments to be prepared and approved accordingly Update 9/11/16 Initial GIs have not identified any asbestos in the ground	1. Further GI works to be undertaken as well as chemical analysis - done for accessible areas. Further work to be done following demolition 2. Developing construction approach as appropriate 3. Technical watching brief to be provided during construction 4. Control measures to be provided in the CEMP		Iain Taylor /GM	Apr.18		2	2	0	0	0	0	GREEN	
10	Asbestos - Saint Gobain	More asbestos may be present than expected Saint Gobain buildings and warehouse than expected and allowed for in the cost plan	Limited level of surveys done to date	Increase cost for removal Not on critical path		Physical conditions	Active	2	2					GREEN	Asbestos register supplied by Saint Gobain Budget estimate of £55,000 provided by contractor - assume 25% additional treatment costs Update 9/11/16 Obtained asbestos register from Saint Gobain and review as required	1. Complete appropriate surveys during design development - start in Q1 2017 2. Appoint specialists as required		Josh Moran	1. Feb 17 2. March 17		2	2	0	0	0	0	GREEN	
26	Doxey Road Rail Bridge	Works associated with Doxey Road Rail Bridge may need to be completed under a NR possession or may have to be done out of hours	1. To comply with safety requirements	1. Change to programme 2. Loss of control over when the work is done Note work is not on the critical path Cost of possession - approx. 50k	Could be all sorted before we start on site in terms of agreeing timescales etc	Approvals	Active	2	2					GREEN	Nov 2015 - Works can be programmed and adjusted to suit Network Rail possession; delivery programme provides time to incorporate this	1. On-going discussion and dialogue to ensure NR approve strengthening/vehicle containment proposals and that the requirement for a possession is raised early in the design process 2. Programme construction works accordingly to minimise delay and impact on overall delivery programme 3. 16 weeks notice required by NR for Possessions.		DW	Jan 17	Actions will not reduce the risk We need to follow due process. Sufficient time in programme to abort any increase in programme caused	2	2	0	0	0	0	GREEN	
28	Section C - Network Rail	Section C - There is a risk that Network Rail may not accept the works proposed at Doxey Road bridge (wing wall)	1. NR perceive that there will be adverse effects on their asset - bridge 2. Work is on their land	1. CC would have to take ownership of the asset 2. Keep with same design if we took ownership of the bridge 3. Ongoing maintenance for CC (effect on Business Case) No effect on the delivery programme	They have accepted outline design in principle	Approvals	Active	2				2		GREEN	Further dialogue with NR required Issues with Taylor Wimpey existing option agreement with Network Rail is affecting the approval process 22/05/16 Update: Detailed submitted to Network Rail for review on 29/04/16 Update 9/11/16 2. Preliminary details submitted and NR have no objection in principal but are awaiting the submission of detailed proposals. 3. Complete detailed survey COMPLETED	1. On-going liaison with NR to agree scope of works 2. Detailed proposals to be developed and submitted to NR for approval		Dave Wymer	10.Jan.17		2	0	0	0	2	0	GREEN	
38	STW approvals	STW may not accept our current proposals for connection of proposed design e.g. discharge into existing STW network at Ten pin	1. Proposal is to increase the amount of water that is going into their system	1. Change to proposals including further attenuation (£50k) 2. STW may insist on us adopting their surface water drainage system	Currently awaiting feedback	Approvals	Active	2	2					GREEN	Outline proposals submitted for approval. Consider potential settlement in drainage design. Meeting arranged with EA and SCC flood risk team for end of Nov 2015 to review design. Nov - 2015 drainage design almost complete 05/01/16 Update: Drainage design proposals provided and will be submitted to SCC Flood Risk Team and STW for review/comment. 26/05/16 Update - Drainage design proposals had to be updated to reflect design changes. Draft set of drawings provided by Sheffield office and being reviewed.	1. Engage with STW concerning their asset - ongoing 2. Redesign drainage proposals if approval cannot be obtained - only if necessary 3. Engage with stakeholders to consider requirements and obtain approval where required - ongoing		1. Dave Singer	March 17	Post mitigation the same	2	2	0	0	0	0	0	GREEN
39	River Sow outfall	Proposed outfall into the River Sow may not receive approval from the EA	1. Proposal do not improve the current situation 2. EA always seek improvements of situation	1. Further attenuation required . EO for material increase pipe size £50k		Approvals	Active	2	2					GREEN	The proposed outfall does not add any additional outfall into the River Sow; proposals submitted to the EA for approval. Meeting with the EA arranged for end of Nov 2015 05/01/16 Update: Meeting held with EA in Nov 2015 - discussed proposed additional outfall and EA expressed no issues/concerns. Completed design and supporting information to be issued to all relevant bodies in Jan 2016 for review comments. 01/03/16 Update: Drainage designs to be submitted to relevant parties early March for review and comments. 26/05/16 Update - Drainage design changed about outfall 2 to accommodate changes to N Abut requiring 2 new outfalls to replace existing. Details to be submitted to EA in June 2016 for review. 9/11/16 Update 1. Engage with EA to consider and implement any conditions that they place on the design - completed 2. Carry out detailed drainage/flow modelling and submit to EA for approval/review - completed	1. Submit information to discharge associated planning condition <u>Contingency plan</u> 3. Determine redesign/attenuation proposals if approval not obtained		1. Dave Singer	Jul.17		1	2	0	0	0	0	0	GREEN
45	Tar	Presence of tar within bituminous material may be found (road plainings) in isolated areas	1. SI was completed on limited nr of cores in carriageway	1. Increase in cost as is classes as hazardous waste - cost of disposal		Physical conditions	Active	2	2					GREEN	SI works have been carried out and managing of tar bound material will be contained within the scheme cost Allowance provided for additional areas Update 9/11/16 1. Carry out detailed coring and assessment tests - completed and no bituminous material found 2. Review construction approach and leave in-situ if possible. - done.	No further action possible Provision in contingency		Josh Moran			2	2	0	0	0	0	GREEN	
46	Flora and fauna	Previously unidentified protected flora and fauna may be discovered on the site before or during the course of the works	1. Age of the surveys and EIA (2014) 2. Survey was limited due to access restrictions	1. Delay progress of the works 2. Change in construction method/ additional mitigation required	EIA completed.	Physical conditions	Active	2	2	2				GREEN	Protection measures to be outlined in the CEMP Update 9/11/16 2. Detailed assessment and reporting has been completed as part of the EIA - done	Management 1. Contractor to appoint ecological clerk of works 2. Process and procedure to be outlined in the CEMP - Aug 18		1. Gavin 2. Gavin	Aug 18		2	2	2	0	0	0	GREEN	
51	Condition of existing drainage	Condition of existing drainage that the proposed design ties into may be worse than expected	1. Age of drainage 2. Accuracy of survey	1. Cost for additional drainage works		Physical conditions	Active	2	2	2				GREEN	Potential settlement issues with existing and new. 05/01/16 Update: Surveys carried out suggest existing asset in reasonable condition to not cause concern when making new connections. 26/05/16 Update - No change from previous. Update 9/11/16 1. Extensive drainage survey carried out as part of detailed design - completed 2. Where practicable to do so, avoid the use of existing drainage	1. Complete remedial works if required during construction		David Singer	Aug.18		2	2	2	0	0	0	0	GREEN

Risk Identification								Current Assessment						Risk Management						Post Mitigation Assessment							
Nr	Title	Risk There is a risk that....	Cause	Consequence	Pre workshop/ workshop comment	Risk Category	Status	Likelihood	Cost	Time	Reputation	Objectives	Disruption	Current Risk Status	Management Actions Taken/ Update	Management Actions Planned	Cost of Mitigation £	Action Owner	Date By	Comments	Likelihood	Cost	Time	Reputation	Objectives	Disruption	Target Risk Status
64	Ground conditions	Additional material may need to be removed -hard dig	Assumption that we will remove certain amount of bituminous material - GI and SI done Isolated variance from surveys	1. Increase cost 2. Increase time		Physical conditions	Active	2	2	2				GREEN	To be refined with construction cost estimate Assume £10m³ for 1000m³. Further assessment to be made following the discovery of a 'Rock Blanket' under the car park. Further trial holes required. 24/05/16 Update: Most likely: assumed 4 occasions of encountering hard dig, standing time, resolution of issue. 1 week delay for each event, assume 50% on critical path plus £10k for direct cost of each event. Best case: direct cost but no critical delay. Worst case: direct cost and all 4 week delay on critical path. 9/11/16 2. Review bore hole logs(reviewed) and develop construction approach accordingly	1. Complete GPR survey and analyse information and review cost allowance 2. Provide allowance in risk register		Gavin	1. End Dec		2	2	2	0	0	0	GREEN
67	Scope increase	Increase in scope of accommodation/ reinstatement works for private land owners from agreed and allowed for in the budget	1. To maintain good relationships with residents 2. To reduce subsequent claims (compensation) 3. Unexpected damage caused during or as a result of the works/project	1. Increase in cost 2. Potential extension of programme for additional reinstatement 3. Potential internal challenge		Objectives	Active	2	2	2	1			GREEN	Allowance made for potential works Actual works cost to be included within the construction estimate 05/01/16 Update: Overdesign of accommodation works being prepared by DS. 01/03/16 Update: Draft options prepared, awaiting land negotiations to be resolved prior to contacting 3rd parties and discussing requirements for acco works. 26/05/16 Update - Acco dwgs complete as far as able until land negotiations completed. Update 9/11/16 Develop robust design based on appropriate SI works - completed	1. Agree extent of proposed Works in advance and ensure appropriate protection provided - ongoing 2. Try to ensure construction activities do not cause damage requiring additional works. - future		Dave Singer	July 17		2	2	2	1	0	0	GREEN
69	Pile lengths	There is potential for an increase in pile lengths over and above the current design	1. Assessment of average length based are based on limited trial piling 2. Variable ground conditions across the site	1. Cost increase - say 10% of pile 200k = 20k 2. Extension to programme/ delay	note could be a saving if the lengths are less	Design/ Technology	Active	2	2	2				GREEN	Assume additional 5000m of pile at £60/m Update 9/11/16 1. Complete and review ground investigation works - completed 2. Prepare preliminary pile design - completed 3. Complete test pile works - completed 4. Reassess pile design following pile testing - completed	No further actions possible.		Iain Taylor			2	2	2	0	0	0	GREEN
73	Contamination - duct	When we commence works to remove the pipe we may find that the methodology for removal may have to change	1. Existing condition is unknown - limited information from STATS 2. Potential local ground may be contaminated	1. Delay to works 2. Cost for disposal of material 3. Cost of delay	Costs assume we are removing the pipe in cost plan. Note this scope may be removed	Physical conditions	Active	2	2	2				GREEN	Removal of the duct to be allowed for within the target cost 24/05/16 Update: Most likely: additional disposal cost of material £25k Worst case 1 week delay due to environmental incident plus disposal cost, best case no effect	1. Review decontamination process from WPD - 2. Geo-environmental engineer to be present on site during excavation 3. Control methods to be developed and incorporated within the CEMP		1. Josh 2. Gavin 3. Gavin	1. July 17 2. During construction 3. Aug 18		2	2	2	0	0	0	GREEN
103	Temp works approval	EA may not accept our initial proposals for temporary work to river crossing and piling platforms - north abutment to pier	1. EA may believe there is still a risk of pollution or flooding associated with our initial proposals]	Change to proposals - further mitigation required £20-£100	EA have agreed the permanent works	Approvals	Active	2	2					GREEN		1. Engage temporary works designer as the earliest opportunity		Josh/ Gavin	01.Apr.17	Still up to third party to agree. Leave likelihood the same	2	2	0	0	0	0	GREEN
3	Protected species	Significant protected species populations may discovered as a result of environmental survey	1. Age of the surveys and EIA (2014) 2. Survey was limited due to access restrictions	1. Delay progress of the works 2. Change in construction method / additional mitigation required	EIA completed.	Physical conditions	Active	1	2	2				GREEN	Recommendment surveys to be completed as outlined in the EIA and CEMP Update 9/11/16 1. Extensive surveys and reporting has been undertaken and reported in the EIA. - completed 2. Mitigation to be designed and assessed in the EIA as appropriate completed	1. Liaise with EA, Natural England and Staffordshire Wildlife Trust to agree mitigation required during design development - ongoing 2. Redo surveys throughout 2017 2. Construction Environment Management Plan to be developed and approved - ongoing		Dean R. Sergeant	1. May 17 2. March 17. 3. Aug 18		1	2	2	0	0	0	GREEN
29	Archaeology	Significant archaeological discovery during construction may occur	Going into peat which is greater preserver	1. Stop work and have assesse 2. Delay 3. Associated cost of delay and management	Heritage environmental mgt plan Low because we are piling and excavations are not that deep Not assessed as significant finding	Physical conditions	Active	1	2	2				GREEN	HEMP currently being developed On going discussions with Scientific Officer from Historic England 22/04/16 update: Archaeological window samples undertaken in accordance with the HEMP and the mitigation required. Update 9/11/16 1. Desktop survey to be conducted as part of the EIA development. Information to be provided for ECI discussions. - Completed 2. Detailed assessment to be completed as part of the HEMP - Completed 3. Historical records to be reviewed and provided to contractor if available - limited information found to be useful 4. Archaeological management plan (HEMP) to be developed and approved - done	Management - comply with HEMP		Iain Taylor	Aug.18		1	2	2	0	0	0	GREEN
101	Pollution incident	Pollution incident occurs during construction as a result from the works	1. Incorrectly stored plant, fuel and materials 2. Using plant around watercourses	1. Delay progress of the works 2. Adverse publicity 3. Environmental damage		Project management	Active	1	2	2	2			GREEN	24/05/16 Update: Most likely: 1 week delay plus £10k direct cost for spill kits. Worst case 2 weeks delay plus £50k clear up costs, best case no effect.	1. Control measures to be identified within the CEMP 2. Contractors and sub contractors to ensure compliance with the CEMP; specific activities are to be covered in the site induction 3. Incident response plan to be developed 4. Site vehicles fitted with spill kits		Gavin and lan			1	2	2	2	0	0	GREEN
102	TM clashes	TM clashes with other works - particularly those planned on the M6	Other planned works may change their programme Our programme may change	1. Change to construction programme 2. Adjustment to planned TM	road space forward notice submitted	Physical conditions	Active	2	1	1				GREEN		1. Book road space and review time periods/durations 2. Liaise with Network Management 3. Amend construction programme as maybe required		Dave Singer/ Iain Taylor			2	1	1	0	0	0	GREEN
30	UXO	Unexploded ordnance may be discovered	Other local projects have encountered UXO Former RAF base locally	1. Delay 2. Cost to remove	desktop survey	Physical conditions	Active	1	1	1				GREEN	Desktop survey carried out as part of ES concluded that the site was low risk Update 9/11/16 1. Desktop survey to be conducted and reviewed - completed. Survey concluded that the site is low risk	1. GPR to be completed		Josh Moran	Dec.16		1	1	1	0	0	0	GREEN
106	RTC works	Areas of the site may not be accessible as planned	1. Independent RTC during works 2. 3rd Party incident (e.g. police stop works)	1. Delay 2. Claim for prolongation		Physical conditions	Active	1	1	1				GREEN	24/05/16 Update: Most likely: 1 day due to RTC Worst case: 3 days due to 3 events Best case: no effect	1. TM and diversion routes to be maintained with defective equipment replaced - upon commencement of works 2. Contractor to develop contingency plans within TM phasing		Gavin and lan	Apr.18		1	1	1	0	0	0	GREEN

Risk Identification								Current Assessment						Risk Management							Post Mitigation Assessment						
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108	Vandalism	Theft / vandalism on site	1. Experienced on other projects 2. Security level adopted	1. Delay progress of works 2. Cost of replacement items 3. Perception of vandalism		Stakeholders	Active	1	1	1	1			GREEN	24/05/16 Update: Most likely: 2 days lost for 2 minor events Worst case: 2 weeks due to standing waiting for plant Best case: no effect Update 9/11/16 Cost allowance made for some security provision	1. Contractor to explore security requirements and employ appropriate security measures as required specifically relating to the finalised compound area 2. All plant and equipment to be stored in accordance with the site establishment 3. Plant to be protected with cab shuttering and disarmed in accordance with the manufacturers requirements		Gavin and Ian	Apr.18		1	1	1	1	0	0	GREEN