

Programme:	M6 - A1 Study		
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Revision History

Date of next revision:

Revision Date	Summary of changes	Changes Marked
17/10/2019	P01 - First Issue	N/A

Approvals

This Document requires the following approvals. A signed Copy should be placed in the project files.

Name	Signature	Title	Date of Issue	Version
[REDACTED]		Project Manager (AECOM)	17/10/2019	P01

Distribution

This Document should be distributed to:

Name	Title	Date of Issue	Version
			P01

Task number 1-878

Update Date	06/05/20 - May Risk Review
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Green	Risk has been reviewed and updated
Yellow	Risk has been Closed
Orange	Critical Risk to project delivery
Red	New / Updated text added

Stages
Priority
Owner

No	Route (AE/Red/Orange/Blue)	Date Risk added to Register	Type	Priority	Risk/Opportunity	Risk/Opportunity Effect	Initial Pre Mitigation			Initial Mitigation	Initial Post Mitigation			Update No	Residual Impact on Project	Change (from previous update)	Post Update			Risk Owner	Risk Manager	Risk Stage
							Prob	Imp	P1		Prob	Imp	P1				Prob	Imp	P1			
R023	All	18/06/2019 (added from Risk Workshop)	Risk	Pre - PCF 0	Potentially good schemes could be ruled out at an early stage due to preliminary VM cost being deemed insufficient to proceed	An inaccurate picture of the value of the scheme is presented to decision makers	3	3	16	Ensure strengths and weaknesses of the available tools are shared and agreed with the client team at the outset. If found to be a problem, then set out proposals to capture impacts more reliably, that may be using more qualitative methods or enhancement of the existing tools.	2	3	8	ASR updated to include explanation of potentially understating local benefits due to strategic nature of modelling						Modelling & Appraisal team		
R006	All	1/06/2019 (added from Quarterly statement 25/06/19)	Risk	Pre - PCF 0	Existing environmental constraints could impact on design options	Environmental constraints identified makes scheme potentially unattractive or progress to next stage	3	3	12	Mitigations to be identified within the study and corridor options selection to account or environmental constraints and indirect environmental constraints	2	3	8	PERA completed and general mitigation considered at high level						AECOM		
R003	All	1/06/2019 (added from Quarterly statement 25/06/19)	Risk	Pre - PCF 0	Changes in Government Policy due to current political events may impact on programme	Scheme study being put on hold / Changes to scope & programme	3	3	16	Work with HE Team and key stakeholders to provide robust case for our inland scheme delivery	2	3	8						HE			
R061	All	15/11/2019	Risk	Pre - PCF 0	Lack of clarity/comment of other schemes	Optimum route not selected	3	3	12	Agree as early as possible what alternative schemes we feel are relevant and agree a point at which this decision is made	2	3	8						AECOM/HE			
R079	All	15/11/2019	Risk	Pre - PCF 0	Level of detail from Benchmark more data led than expected	Overpend due to detailed costing on more corridors than planned for	3	3	9	To be managed during project boards, and EWNICE process to be implemented	3	2	8	Duplicate in issues log						AECOM/HE		
R04	All	3-3-20-9	Risk	Pre-PCF 0	Determining which corridors to proceed to detailed modelling	Programme overrun	-	-	-4	Understand workshops to ensure prompt sign-off submit CR to owner for mitigation	-	3	4	Close and move to issues log						AECOM/HE		
R085	All	17/12/2019	Risk	Pre - PCF 0	Increased unit and area from HE specialist, dependent on the level of work	Programme and budget overrun	3	3	12	Manage specialist requirements to ensure appropriate QA procedure	2	3	8	Duplicate in issues log						HE		
R029	All	06/10/2019	Risk	Post - PCF 0	Terrain - numerous hills & valleys along all routes. Potential to cross historic mined coalfields, areas where relatively strong rocks may be encountered and in the River Area valley there are some deep relatively weak laminated glacial clay and siltstone. These geotechnical items will impact construction on complexity and hence cost and their early consideration is desirable as it may be possible to mitigate these in part by route changes at this early stage.	Potential large amounts of cut/fill / New Structures.	5	5	25	Analysis of 3D information to generate more detailed corridor planning. Use available aerial photography (including multi-spectral) and LIDAR together with conventional mapping. Procure scheme specific data as needed for gap filling	5	5	16	Identified tunnel structures for removal and refined vertical alignment. Tunnels are expensive and probably will only be used as a last resort.						AECOM		
R031	All	06/10/2019	Risk	Post - PCF 0	Multiple Watercourses / Railways / existing roads to be crossed	Complex structures will assess the BCR for any proposed corridor	5	5	25	Gain accurate information early, a lowering refinement of corridors and minimising number of crossings. Ditto for R029 - initially use remote sensing methods	5	5	20						AECOM			
R04	Risk	06-03-09	Risk	Pre-PCF 0	Use of the site to create additional land and subsequent impact on local residents/businesses	Use of the site to create additional land and subsequent impact on local residents/businesses	4	4	16	Use of the site to create additional land and subsequent impact on local residents/businesses	-	-	-4	Closed - Route not to be considered further						AECOM		

R00	Risk	00-020-0	Risk	Post-PCF0	ACHES- Major interchange required with A.M. Current route consider please the junction too close to A.M.J-0	Unable to gain DES approval	4	4	25	Corridor refinement, and refinement of layout	3	3	4	Closed - Route not to be considered further						AECOM		
R001	Orange	00100010	Risk	Post-PCF0	CH82- Tie in with existing ATM. Current proposed corridor due the new junction on top close to J-5 (A850). This would not meet design standards for junction spacing and utility to gain a departure. If the corridor was moved south this would then align through a large area of dense, mature woodland. May need to consider alternative route to allow for tie in with ATM.	Unable to gain DES approval	5	5	25	Corridor refinement, and refinement of layout			16	Agreed with client to be refined at Stage 1 - catch up with MT on Friday						AECOM		
R006	Purple	00100010	Risk	Post-PCF0	CH20-1- Tie in with existing ATM. Current proposed corridor due the new junction on top close to J-5 (A850). This would not meet design standards for junction spacing and utility to gain a departure. If the corridor was moved south this would then align through a large area of dense, mature woodland. May need to consider alternative route to allow for tie in with ATM.	Unable to gain DES approval	4	4	25	Route refinement, and detail of road layout			16	Closed - agreed with client and stakeholders that purple route can end at AB						AECOM		
R008	Red	00-020-0	Risk	Post-PCF0	CH85- Route to cross the canal to connect to the existing M10. This would require crossing the canal at a point where there are existing structures. Public and potential objection to large scale development.	Public and potential objection to large scale development	4	4	25	Route refinement, and detail of road layout			4	Closed - Route not to be considered further						AECOM		
R020	Red	00100010	Risk	Post-PCF0	CH85- Route to cross the canal to connect to the existing M10. This would require crossing the canal at a point where there are existing structures. Public and potential objection to large scale development.	Public and potential objection to large scale development	4	4	25	Route refinement, and detail of road layout			16	Closed - Route not to be considered further						AECOM		
R023	Red	00100010	Risk	Post-PCF0	CH85- Route to cross the canal to connect to the existing M10. This would require crossing the canal at a point where there are existing structures. Public and potential objection to large scale development.	Public and potential objection to large scale development	4	4	25	Route refinement, and detail of road layout			16	Closed - Route not to be considered further						AECOM		
R033	All	00100010	Risk	Post-PCF0	Restrictive / Limited Accessibility For surveys and for construction	Unable to gain full information for analysis of corridor	5	5	20	Seek landowner consent for access, utilising existing information on DfE for R020 - initially use remote sensing methods		3	12	Risk to be re-evaluated at Stage 1						AECOM		
R035	All	00100010	Risk	Post-PCF0	Tie in with existing M5 - Complex existing junction arrangement	Complex structures will assess the BCR for any proposed corridor	5	5	20	Corridor refinement, and refinement of layout		3	12	Risk to be re-evaluated at Stage 1						AECOM		
R00	All	00100010	Risk	Post-PCF0	At CH7-5-0 substantial structures required to cross canal road and then cross Lower Park Marina & Canal	Complex structures will assess the BCR for any proposed corridor		5	20	Corridor refinement, and refinement of layout	3	3	9	Risk to be re-evaluated at Stage 1						AECOM		
R02	All	00100010	Risk	Post-PCF0	At CH19-0-19.5 - Structures required to cross the A66 at a point where there are existing structures. Only approx. 650m separating all features. Proposed new junction with the A66 - limited space or this junction due to canal & river.	Complex structures will assess the BCR for any proposed corridor		5	20	Corridor refinement, and refinement of layout			16	Risk to be re-evaluated at Stage 1						AECOM		
R00	Red	00100010	Risk	Post-PCF0	CH85- Route to cross the canal to connect to the existing M10. This would require crossing the canal at a point where there are existing structures. Public and potential objection to large scale development.	Public and potential objection to large scale development		4	25	Route refinement, and detail of road layout			16	Closed - Route not to be considered further						AECOM		

R04	Risk	08/10/2019	Risk	Post - PCF 0	CH50.2-5.0 - End of route to a with existing ASD	Complex structures will cross the BCR for any proposed corridor	4	20	Corridor refinement, and refinement of layout	4	4	4	Closed - Route not to be considered further	AECOM
R05	Orange/Purple	08/10/2019	Risk	Post - PCF 0	CH 5.0-8.0 - Potential in favour on height of new structures due to flight paths for Leeds/Bradford Airport	Significant change to vertical alignment, generating additional cost and lowering BCR	5	20	Identify on of local restrictions and refinement of layout	3	3	9	Red removed to be refined at stage 1	AECOM
R06	Purple	08/10/2019	Risk	Post - PCF 0	CH50.2-5.0 - There are potential by a large number of structures required to cross existing roads (10 No) in a relatively short length along the current proposed route meaning cost per Km of this corridor route will be high.	Complex structures will cross the BCR for any proposed corridor	5	20	Route refinement and detailed modelling	3	3	12	Number of structures reassessed as part of refinement	AECOM
R061	Red	08/10/2019	Risk	Post - PCF 0	CH51.2-51.5 - Complex structures will cross the BCR for any proposed corridor	Complex structures will cross the BCR for any proposed corridor	4	20	Route refinement, and refinement of layout	4	4	12	Closed - Route not to be considered further	AECOM
R07	Red	08/10/2019	Risk	Post - PCF 0	CH52.4-5.0 - Complex structures will cross the BCR for any proposed corridor	Complex structures will cross the BCR for any proposed corridor	4	20	Route refinement, and refinement of layout	4	4	12	Closed - Route not to be considered further	AECOM
R036	AI	08/10/2019	Risk	Post - PCF 0	At CH1.0 need to put the corridor around Barrowford Reservoir	Alignment could adversely impact local properties/businesses and could increase length of scheme and cost		10	Corridor refinement, and refinement of layout	3	3	9	To be reviewed at stage 1	AECOM
R037	AI	08/10/2019	Risk	Post - PCF 0	At CH3.0 need to put the corridor around Slipper Hill Reservoir	Alignment could adversely impact local properties/businesses and could increase length of scheme and cost		10	Corridor refinement, and refinement of layout	3	3	9	To be reviewed at stage 1	AECOM
R038	AI	08/10/2019	Risk	Post - PCF 0	At CH.0 need to put the corridor around Whitmore Reservoir	Alignment could adversely impact local properties/businesses and could increase length of scheme and cost		10	Corridor refinement, and refinement of layout	3	3	9	To be reviewed at stage 1	AECOM
R039	AI	08/10/2019	Risk	Post - PCF 0	At CH5.5 need to try and put the route around the holiday caravan park	Alignment could adversely impact local properties/businesses and could increase length of scheme and cost		10	Corridor refinement, and refinement of layout	3	3	9	To be reviewed at stage 1	AECOM
R01	AI	08/10/2019	Risk	Post - PCF 0	At CH10.0 - Junction required with existing ASD	Lack of available space in proximity of existing network creates additional landtake and subsequent impact on local residents/businesses		10	Corridor refinement, and refinement of layout	3	3	9	To be reviewed at stage 1	AECOM
R04	Risk	08/10/2019	Risk	Post - PCF 0	CH50.0 - 50.0 - Need to try and put the route around the ASD	Complex structures will cross the BCR for any proposed corridor	4	20	Route refinement, and refinement of layout	4	4	4	Closed - Route not to be considered further	AECOM

R017	All	1 08/2019 (added from Quality statement 25 06/19)	Risk	Pre - PCF 0	Issues with quantifying wider economic issues	Appraisal underestimates scale of economic benefits	3	12	Use of expertise in field by project team; close liaison with HE economy team	3	3	9							AECOM		
R025	All	18 08/2019 (added from Risk Workshop)	Risk	Pre - PCF 0	Increased uncertainty in the status of schemes in the wider NW region, caused by analysis helping to optimise the potential programme of schemes impacting on trans-pennine movements	Confirms the most appropriate schemes to be carried forward	3	3	9	Ensure collaborative approach to sharing information with the client organisation, and wider, in terms of impacts, VFM and costs	2	3	6	Anticipated RIS programme announcement Spring 2020 (TBC)					Modelling & Appraisal team		
R032	All	09/10/2019	Risk	Pre - PCF 0	Environment – AQ, SSSI, National Parks, Protected Species	Unavailability of environmental PCF products for any proposed corridor	3	5	15	Early identification of any environmental constraints and early engagement with statutory bodies	2	3	8	Mitigation progressed at this stage					AECOM		
R004		1-08/2019 (added from Quality statement 25 06/19)	Risk				3		9		2	3	6	Closed: Only delivery partners engaged at this stage					JPM/J. Taylor/S. G. G.		
R005		1-08/2019 (added from Quality statement 25 06/19)	Risk				3		9		2	3	6	Closed: Only delivery partners engaged at this stage					JPM/J. Taylor/S. G. G.		
R007	Red	1-08/2019 (added from Quality statement 25 06/19)	Risk	Pre-PCF 0	Noise/Air pollution generated by preferred corridor concept and impact on potential noise important areas	Potential noise/Air pollution risks of scheme make it locally unattractive or uneconomical to progress to next stage. In addition duration and costs of air quality monitoring required at a later stage may be a risk to programme.	3		11	In full Environmental PERA to identify receptors and potential mitigation	2	3	6	Corridor option removed					AECOM		
R008	Blue	08/20/19 (added from Quality statement 25 06/19)	Risk	Pre-PCF 0	None of the corridor concepts suitable	None of the corridor concepts suitable	3		9	Delivery team to work with stakeholders to identify acceptable corridors identified	2	3	6	Closed - stakeholder and OFI consultations undertaken, two acceptable corridors identified					AECOM		
R016	All	1 08/2019 (added from Quality statement 25 06/19)	Risk	Pre - PCF 0	Available transport modelling design tools not suitable for purpose	Models do not represent likely impacts of proposals with sufficient accuracy	3	12		Early engagement with TPO and other project teams using similar models	3	3	9	Generally agreed that modelling is acceptable for PCF stage 0, will need refinement for stage 1					AECOM		
R018 (01)	All	1 08/2019 (added from Quality statement 25 06/19)	Opportunity	Pre - PCF 0	Potential to collaborate with teams that have been involved with the TTP and NWQ studies	Efficiency benefits	3	12		Share information across projects and ensure if of value of information through HE PM			16					AECOM	HE		
R018 (02)	All	1 08/2019 (added from Quality statement 25 06/19)	Opportunity	Pre - PCF 0	Chance to best use the work previously conducted within the study area, including work conducted by T/N, Local Authorities and other consultancies	Improve knowledge, enhance technical understanding and efficiency benefits	3	12		Request information at project board			16					AECOM	HE		
R020	Purple	12 08/2019 (added from Risk Workshop)	Risk	Pre - PCF 0	Noise / Air pollution generated by preferred route and impact on potential noise important areas	Potential noise / Air pollution risks of scheme make it locally unattractive or uneconomical to progress to next stage. In addition duration and costs of air quality monitoring required at a later stage may be a risk to programme.	3	12		In full Environmental PERA to identify receptors and potential mitigation	2	3	6	PERA completed and general mitigation considered at high level					AECOM		
R021	Orange	12 08/2019 (added from Risk Workshop)	Risk	Pre - PCF 0	Noise / Air pollution generated by preferred route and impact on potential noise important areas	Potential noise / Air pollution risks of scheme make it locally unattractive or uneconomical to progress to next stage. In addition duration and costs of air quality monitoring required at a later stage may be a risk to programme.	3	12		In full Environmental PERA to identify receptors and potential mitigation	2	3	6	PERA completed and general mitigation considered at high level					AECOM		

R080	AI	15/11/2019	Risk	Pre - PCF 0	Lack of support from LAAs due to communication next of cons	Scheme receives heavy opposition from key stakeholders LAAs	2	8	8	Stakeholder engagement plan identifies LAAs appropriate state. Key messages document to be issued.	1	3	3	Probability updated						HE
R082	Purple	-3-20-0	Risk	Post-PCF 0	New East Leeds Orbital Route (ELOR) will probably remove requirement for last 2km of route	Involves a portion of the route	4	4	0	Potential new option to link with ELOR	4	0	0	Closed - Undertaken stakeholder engagement, new proposals put forward						AECOM
R083	AI	12/12/2019	Opportunity	Pre - PCF 0	Current proposal is to DDM standard, opportunity to design to D2 standard	Cost and programme savings. Reduced environmental impacts.	3	5	15	Complete PERA and understand key differences and cost savings between DDM and D2 standards.	3	5	15	Proposals presented, option at I under consideration - alternative option currently being created						AECOM
R086	AI	17/12/2019	Risk	Pre - PCF 0	Unable to utilize urban delay modeling function	Impacts benefits	3	3	9	Engage with TPO over possibility of utilizing urban delay modeling function	3	3	9	Added in December update, de liberty left the prepost PM the same due to level of unknown variables.						AECOM/HE
R087	AI	17/12/2019	Risk	Pre - PCF 0	Rival model being developed by TIN	Undermines the confidence in our modeling	2	3	6	Engage with TIN to ensure consistency and quality of modeling	2	3	6	Added in December update, de liberty left the prepost PM the same due to level of unknown variables.						HE
R088	AI	17/12/2019	Opportunity	Pre - PCF 0	Rival model being developed by TIN	Increases the confidence in our modeling	2	3	6	Engage with TIN to ensure consistency and quality of modeling	2	3	6	Added in December update, de liberty left the prepost PM the same due to level of unknown variables.						HE
R089	AI	17/12/2019	Risk	Pre - PCF 0	Unable to fully understand the benefits or LBA in SOBC - potential additional works required	Cost and programme implications. Incorrect discounting of routes.	3	3	9	Cost and programme overrun managed via change control.	3	3	9	Added in December update						AECOM/HE
R090	AI	17/12/2019	Opportunity	Pre - PCF 0	Unable to fully understand the benefits or LBA in SOBC - opportunity for additional works required	Cost and programme opportunities	3	3	9	Cost and programme overrun managed via change control.	3	3	9	Added in December update						AECOM/HE
R091	AI	17/12/2019	Risk	Pre - PCF 0	Leeds Orbital Route (under construction) not included in modeling	Impacts on corridor modeling performance requiring rework	3	0	12				0	Issue log						
R092	AI	-3-20-0	Opportunity	Pre-PCF 0	Leeds Orbital Route (under construction) not included in modeling	Opportunity to take in purpose route to LOR as part of cost saving	3	0	6	Highways team will be LOR as part of cost saving	0	0	0	Closed - Undertaken stakeholder engagement, new proposals put forward						Highways
R093	AI	20/01/2020	Risk	Post - PCF 0	Technology requirements	Requirement for tech not yet understood, additional costs as a result of inclusion	3	0	12	Raised at project board, decision to be made by client, to be reassessed at stage 1	3	0	12							HE
R094	AI	20/01/2020	Risk	Post - PCF 0	Design and run as Expressway	Expressway design standards not included in modeling models, potential for inaccurate costing modeling. Expressway design impacts not considered yet	2	5	10	To be discussed further at project board level and reassessed at stage 1			0							HE

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Probability		Opportunities					Threats				
Very High	5	25	20	15	10	5	5	10	15	20	25
High	4	20	16	12	8	4	4	8	12	16	20
Medium	3	15	12	9	6	3	3	6	9	12	15
Low	2	10	8	6	4	2	2	4	6	8	10
Very Low	1	5	4	3	2	1	1	2	3	4	5
		5	4	3	2	1	1	2	3	4	5
		Very High	High	Medium	Low	Very Low	Very Low	Low	Medium	High	Very High
Impact											