



Bath Clean Air Plan

Bath and North East Somerset Council

Quantitative Risk Assessment at Full Business Case

674726.BR.042.FBC-23 | 3

January 2020



Bath Clean Air Plan

Project No: 674726.BR.042
 Document Title: Quantitative Risk Assessment
 Document No.: 674726.BR.042.FBC-23
 Revision: 3
 Date: January 2020
 Client Name: Bath and North East Somerset Council
 Project Manager: RR
 Author: AP

Jacobs Consultancy Ltd.

1 The Square, Temple Quay
 2nd Floor
 Bristol, BS1 6DG
 United Kingdom
 T +44 (0)117 910 2580
 F +44 (0)117 910 2581
www.jacobs.com

© Copyright 2019 Jacobs Consultancy Ltd.. The concepts and information contained in this document are the property of Jacobs. Use or copying of this document in whole or in part without the written permission of Jacobs constitutes an infringement of copyright.

Limitation: This document has been prepared on behalf of, and for the exclusive use of Jacobs' client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this document by any third party.

Document history and status

Revision	Date	Description	By	Review	Approved
1	21.05.2018	FBC draft	AP	RR	BS
2	13.12.2019	Updated FBC draft	AP	RR	BS
3	17.01.2020	Final FBC	AP	RR	BS

Contents

1. Introduction.....2

1.1 Purpose of this Report.....2

2. Risk Model Inputs4

2.1 Cost of Implementation and Operation4

2.2 Risk Identification, Categorisation, and Ranking4

2.3 Risk Quantification4

3. Risk Model Outputs.....6

3.1 Risk Value.....6

3.2 Highest Ranked Risks6

Appendix A. @Risk Output

Appendix B. Risk Register

Acronyms and Abbreviations

AQMA	Air Quality Management Area
AQAP	Air Quality Action Plan
AQO	Air Quality Objective
B&NES	Bath and North East Somerset
BCC	Bristol City Council
CAZ	Clean Air Zone
Defra	Department for Environment, Food & Rural Affairs
DfT	Department for Transport
EU	European Union
EV	Electric Vehicle
HGV	Heavy Goods Vehicle
JAQU	Joint Air Quality Unit
LA	Local Authority
LGV	Light Goods Vehicle
NOx	Nitrogen Oxides
NO ₂	Nitrogen Dioxide
SP	Stated Preference

1. Introduction

Poor air quality is the largest known environmental risk to public health in the UK¹. Investing in cleaner air and doing more to tackle air pollution are priorities for the EU and UK governments, as well as for Bath and North East Somerset Council (B&NES). B&NES has monitored and endeavoured to address air quality in Bath, and wider B&NES, since 2002. Despite this, Bath has ongoing exceedances of the legal limits for Nitrogen Dioxide (NO₂) and these are predicted to continue until 2025 without intervention.

In 2017 the government published a UK Air Quality Plan for Nitrogen Dioxide² setting out how compliance with the EU Limit Value for annual mean NO₂ will be reached across the UK in the shortest possible time. Due to forecast air quality exceedances, B&NES, along with 27 other Local Authorities, was directed by Minister Therese Coffey (Defra) and Minister Jesse Norman (DfT) in 2017 to produce a Clean Air Plan (CAP). The Plan must set out how B&NES will achieve sufficient air quality improvements in the shortest possible time. In line with Government guidance B&NES is working towards implementation of a Clean Air Zone (CAZ), including both charging and non-charging measures, in order to achieve sufficient improvement in air quality and public health.

Jacobs has been commissioned by B&NES to produce an Outline Business Case (OBC) and Full Business Case (FBC) for the delivery of the CAP; a package of measures which will bring about compliance with the Limit Value for annual mean NO₂ in the shortest time possible in Bath. The OBC assessed the shortlist of options set out in the Strategic Outline Case³ and proposed a preferred option including details of delivery. The FBC develops the preferred option set out in the OBC, detailing the commercial, financial and management requirements to implement and operate the scheme. The OBC and FBC form a bid to central government for funding to implement the CAP.

1.1 Purpose of this Report

A Quantitative Risk Assessment (QRA) was undertaken for the Bath Clean Air Plan Scheme. The scheme involves the implementation of a Clean Air Zone in which highly polluting vehicles would be charged to drive.

At the OBC stage, a QRA was developed and supported the OBC Submission. Now at the FBC stage, the QRA has been fully updated to support the FBC Submission.

This is the third QRA undertaken on this scheme. This technical memorandum outlines the risk identification (risk register) and the QRA process and presents the QRA outputs.

The main purpose of the QRA is to support the scheme costing as presented within the financial case by predicting the level of risk contribution, having a defined level of confidence, to cover the various stages of the scheme. QRA allows for uncertainty in known but unplanned additional cost items, including cost due to delay, that cannot be included in the project costs. The assessed risk value is to be used in the financial case for this package and incorporated in the economic appraisal.

The QRA process involves four steps.

- Step 1 is identification of all known risks affecting the project through risk workshops and risk reviews. This step results in a risk register.
- Step 2 is analysis of the various risks by defining their distributions in terms of probabilities, impacts and knock-on effects. This information is also gathered through risk workshops and other interactions including stakeholders.
- Step 3 is undertaking the risk modelling using Monte Carlo simulation (in this project @Risk® software was used).

¹ Public Health England (2014) Estimating local mortality burdens associated with particular air pollution.

<https://www.gov.uk/government/publications/estimating-local-mortality-burdens-associated-with-particulate-air-pollution>

² <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>

³ Bath and North East Somerset Council Clean Air Plan: Strategic Outline Case, March 2018

http://www.bathnes.gov.uk/sites/default/files/siteimages/Environment/Pollution/strategic_outline_case_bath_28.03.2018_with_annexes.pdf

- Step 4 is analysing the results against required contingency needs for the project. For the economics case, the DfT WebTAG guidance is to use the P(Mean), the mean percentile value.

The risk model has been constructed by Jacobs using Microsoft Excel® and @Risk® software packages. The model used the Monte-Carlo simulation theory by replicating a large number of iterations of possible project risk scenarios. Confidence levels relating to the cost of the scheme are obtained from the distribution of the averaged results produced by the simulations.

2. Risk Model Inputs

2.1 Cost of Implementation and Operation

The current estimated cost of implementation of the scheme is approximately £7.0M, and this value has been considered when determining the extent of risks used in the QRA.

Monthly delay costs have been established for risks which occur during various stages of the project. These are split between costs which occur during the FBC stage, Implementation stage, and Delivery/Operation stages of the scheme. The following unit costs of delay (£ per month) have been considered for the various risks that could cause delay to the project:

- £10k/month – for risks during the FBC stage that do not affect the critical path of project. This allows for project management costs and the potential for a limited amount of re-work.
- £100k/month – for risks during the FBC and implementation stages that affect the critical path of project. This is based on the average spend per month of the project to date.
- £135k/month – for risks during the implementation phase that affect the critical path of project and include legal staff costs. This is based on the average spend per month of the project to date plus an allowance for a limited amount of legal assistance within a month.
- £175k/month – for risks during the implementation phase that affect the critical path of project most significantly. This is based on average spend per month plus an allowance which reflects the high contract value of the item.
- £25k/month – for risks during the implementation phase that do not affect the critical path of the project. This allows for project management costs and the potential for acceleration.
- £42k/month – for risks that occur during delivery/operation of the scheme. This is based on the approximate monthly cost of staff required to enforce the scheme.

2.2 Risk Identification, Categorisation, and Ranking

At OBC submission, three distinct stages of this scheme were identified, namely; 1) Outline Business Case / Full Business Case Stage, 2) Implementation Stage, and 3) Delivery Stage. Three separate QRA analyses were undertaken; each assessing the risks that are applicable to the corresponding stage.

For this FBC stage, the above mentioned three risk registers have been combined into a single risk register and updated through group consensus via a risk workshop. At this stage the risks have been placed into one of six categories; Compliance, Political, Design, Technical, Implementation, and Delivery. The risk workshop consisted of staff from Bath and North East Somerset Council and Jacobs that are involved in the project.

Following risk identification, each risk was scored, which produced an Overall Risk Ranking in terms of high, medium, or low for each risk. A number of risk mitigatory/management actions were identified by the project team. The updated Risk Registers are included in Appendix B.

Following the latest risk workshop, 29 risks were deemed potential risks which were quantified (financial risk and/or delay risk). The risks that are used in the QRA were taken directly from the risk registers.

2.3 Risk Quantification

Individual risks were defined in terms of their distributions, likelihood (probability of occurrence), impacts and knock on effects, minimum, maximum, and likely values, through the workshop.

For each risk, the key inputs required in the QRA model are; Cost Impact Estimate (Minimum, Maximum, and Likely), Delay Impact Estimate (Minimum, Maximum, and Likely), and Likelihood.

The Likelihood of risk occurrence is assigned as a percentage in broad categories of; Almost Certain (95%), Likely (50%), Possible (25%), Unlikely (12.5%), and Rare (5%).

These values were then used in the @Risk model to determine a Mean Outcome and a Risk Exposure for each risk and for each iteration. The Monte Carlo simulation used 10,000 iterations using the @Risk software to develop a single probability distribution for all possible risk outcomes for the scheme. @Risk produced various risk percentile values for the overall scheme.

3. Risk Model Outputs

3.1 Risk Value

The QRA figure to include in the financial case, in line with WebTAG guidance is the P(Mean), the mean percentile value. In addition, the 50th Percentile (P(50)) and 80th Percentile (P(80)) also provide further levels of confidence. The QRA results are shown below. The @Risk outputs is included in Appendix A of this document, which show the full range of percentile values calculated by @Risk.

Table 3-1: QRA Results

	P(50)	P(80)	P(Mean)
Previous V2 in June 2019 Grand Total Risk (Financial + Delay)*	£2,272 k*	£3,224 k*	£2,465 k*
Updated V3 in November 2019 Grand Total Risk (Financial + Delay)	£2,529 k	£3,471 k	£2,703 k

* For information only, the results of the previous iteration (V2 June 2019) are also included in the table below for comparison. It is normal for the risk value to vary at various stages of a project with good ongoing risk management.

This shows that with design progression and ongoing risk management, the level of confidence of the QRA has been enhanced through greater certainty around specific risks and costs, hence the accuracy of the overall risk value has been increased.

3.2 Highest Ranked Risks

The top 10 risks by Grand Total Risk (i.e. Financial + Delay) identified by the sensitivity testing are listed below.

Table 3-2: Top Ten Risks

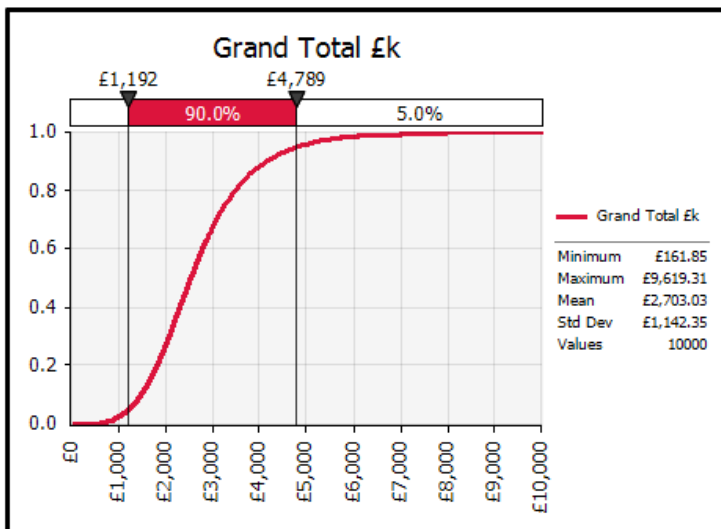
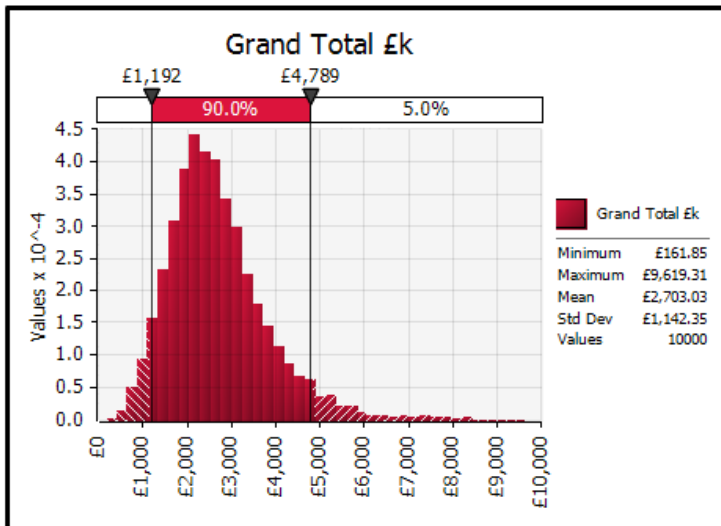
Rank	Risk Ref	Description
1	Risk 016	Successful challenges to the process for making the Order
2	Risk 025	Scheme is not sufficient to achieve air quality compliance by 2021 as anticipated
3	Risk 008	HE or other LA approvals for the signage on the SRN take longer than anticipated
4	Risk 020	The signage installation takes longer than anticipated due to competing priorities for contractors
5	Risk 001	Reliance on the industry's understanding/ability to deliver retrofit solutions for buses/coaches
6	Risk 019	The ANPR camera installation takes longer, or costs more, than anticipated due to competing priorities for contractors
7	Risk 022	Installation delayed due to clashes with other highway works, or requirement to integrate with other large works and major schemes
8	Risk 010	Queen Square Traffic Management design takes longer, or costs more, than anticipated due to changing scheme requirements
9	Risk 018	Delays in obtaining JAQU funding from the Clean Air Fund
10	Risk 004	Delays in obtaining JAQU approvals for the FBC (for example due to a General Election)

Appendix A. @Risk Output

@RISK Output Report for Grand Total £k X59

Performed By: Premathilaka, Anuradha/UKS

Date: 28 November 2019 15:59:20



Simulation Summary Information

Workbook Name	Bath CAZ V4 QRA Oct 19 - V2
Number of Simulations	1
Number of Iterations	10000
Number of Inputs	60
Number of Outputs	4
Sampling Type	Monte Carlo
Simulation Start Time	28/11/2019 15:58
Simulation Duration	00:00:08
Random # Generator	Mersenne Twister
Random Seed	1339936278

Summary Statistics for Grand Total £k

Statistics		Percentile	
Minimum	£ 162	5%	£ 1,192
Maximum	£ 9,619	10%	£ 1,458
Mean	£ 2,703	15%	£ 1,649
Std Dev	£ 1,142	20%	£ 1,805
Variance	1304968.228	25%	£ 1,937
Skewness	1.247675238	30%	£ 2,064
Kurtosis	5.917285134	35%	£ 2,173
Median	£ 2,529	40%	£ 2,289
Mode	£ 2,162	45%	£ 2,413
Left X	£ 1,192	50%	£ 2,529
Left P	5%	55%	£ 2,650
Right X	£ 4,789	60%	£ 2,777
Right P	95%	65%	£ 2,919
Diff X	£ 3,597	70%	£ 3,068
Diff P	90%	75%	£ 3,258
#Errors	0	80%	£ 3,471
Filter Min	Off	85%	£ 3,751
Filter Max	Off	90%	£ 4,146
#Filtered	0	95%	£ 4,789

Appendix B. Risk Register

Risk Register for Bath Clean Air Zone

Rev: V4
 Scheme: Bath Clean Air Zone
 Milestone: Full Business Case
 Works Cost: £7M Estimated

1 = Almost Certain	95.0%
2 = Likely	50.0%
3 = Possible	25.0%
4 = Unlikely	12.5%
5 = Rare	5.0%

QRA Ref	Type	Description	Category	Mitigation owner	Support	Risk Assessment					Proximity (date)	Approach Avoid, Accept, Reduce, Transfer	Mitigation Measures	DATE OF UPDATE	STATUS	Residual Risk					DATE OF CLOSURE	REASON FOR CLOSURE & COMMENTS	Financial/De lay/Both	QRA								May-19 Workshop notes	Oct-19 Update notes					
						Impact		Prob.		Score						RAG	Cost	Time	Perf	Rating				Score	RAG	First QRA Iteration Notes	Likeli-hood	Cost Impact Estimate			Delay Impact Estimate							
						Cost	Time	Rating	Score																			Min (£k)	Max (£k)	Likely (£k)	Min (mths)			Max (mths)	Likely (mths)	Delay Cost (£k)/Month		
Risk 001		Reliance on industry's understanding/ability to deliver retrofit solutions for buses/coaches	Compliance	B&NES		H	L	H	H	7.00	7.00	2020	Reduce	Work with operators and JAQU to identify suitable solutions	24/10/2019	Open	L	L	H	M	3.33	3.33			Financial			50%	0	1000	500							Risk reinstated and probability and cost impact updated.
Risk 002		Cabinet does not approve FBC, resulting in delay	Political	B&NES		M	H	H	M	5.33	5.33	2019	Accept	Early engagement with key politicians	24/10/2019	Open	M	H	H	L	2.67	2.67			Delay			25%				0	6	3	100	Changed wording	Description updated	
Risk 003		Insufficient funding is obtained from JAQU for remainder of feasibility study resulting in use of capital/revenue from the scheme	Design	B&NES		M	H	H	M	5.33	5.33	2019	Reduce	Provided ball park estimates in advance. Providing regular updates to JAQU on project spend, and budget forecasts. Project board informed, and will escalate if required	24/10/2019	Open	M	H	H	M	5.33	5.33			Financial	We have allowed 0 months in cost 75k/month delay cost	50%	0	350	175							Quantities changed	Description and probability updated
Risk 004		Delays in obtaining JAQU approvals for the FBC (for example due to a General Election)	Design	B&NES		M	H	H	M	5.33	5.33	2019	Reduce	Provide regular technical updates to JAQU, keep the Project Board informed and escalate if needed	24/10/2019	Open	M	H	H	L	2.67	2.67			Delay	We have allowed 0 months in cost 75k/month delay cost	50%				0	6	3	100	Delay cost changed	Description updated		
Risk 005		The ANPR camera design takes longer, or costs more, than anticipated due to competing priorities for contractors	Design	B&NES	JAQU	L	M	M	L	1.67	1.67	2019	Mitigate	Commission contractor as early as possible to avoid clashes with other similar schemes	24/10/2019	Open	L	M	M	L	1.67	1.67			Delay	75k/month delay cost as on critical path	5.0%				0	2	1	100	Quantities reviewed			
Risk 006		The signage design takes longer than anticipated due to changing scheme requirements	Design	B&NES	JAQU	L	M	M	L	1.67	1.67	2019	Mitigate	Commence design and confirm scheme requirements as soon as possible.	24/10/2019	Open	L	M	M	L	1.67	1.67			Delay	We have allowed 0 months in cost 75k/month delay cost as on critical path	25%				0	3	1	100	Delay cost changed	Probability revised		
Risk 007		The ICT system design takes longer, or costs more, due to changing scheme requirements (separate from centralised systems)	Design	B&NES	JAQU	L	M	M	M	3.33	3.33	2019	Mitigate	Commence design and confirm scheme requirements as soon as possible.	24/10/2019	Open	L	M	M	L	1.67	1.67			Delay	10k/month delay cost (not 75k because its not on critical path)	25%				0	3	1	10	Description added	Probability revised		
Risk 008		HE or other LA approvals of signage on SRN take longer than anticipated	Design	B&NES		M	M	L	H	5.00	5.00	2019	Reduce	Start approvals as soon as possible to allow greatest amount of time for completion	24/10/2019	Open	M	M	L	M	3.33	3.33			Delay	75k/month delay cost	50%				3	9	6	100	Delay cost changed	Probability revised		
Risk 009		DFT signage approval takes longer than anticipated	Design	B&NES		L	M	L	L	1.33	1.33	2019	Accept	None	24/10/2019	Open	L	M	L	L	1.33	1.33			Delay	12 weeks for DFT 75k/month delay cost	12.5%				0	2	1	100	Delay cost changed	Probability revised		
Risk 010		Queen Square Traffic Management design takes longer, or costs more, than anticipated due to changing scheme requirements	Design	B&NES	JAQU	L	M	M	M	3.33	3.33	2019	Mitigate	Commence design and confirm scheme requirements as soon as possible.	24/10/2019	Open	L	M	M	L	1.67	1.67			Delay		25%				0	6	3	100	New risk	Probability revised		
Risk 011		A lack of resources (number of staff) in Jacobs/JAQU/B&NES results in delays to the project	Technical	B&NES	Jacobs	M	M	M	M	4.00	4.00	2019	Reduce	Ensure that any project plans are supported by resource plans that include sufficient contingency allowance to accommodate any holidays, training, sickness, etc., ensure that the project team keep good records of their discussions and agreements in order to minimise any downtime/loss of productivity due to changes in personnel or changes in roles and responsibilities	24/10/2019	Open	M	M	M	L	2.00	2.00			Delay		50%				0	2	1	100	Quantities added			
Risk 012		The impact of CAZ is politically unacceptable requiring switch off.	Technical	B&NES		L	L	M	M	2.67	2.67	2021	Reduce	Engagement with key politicians, and political parties, in advance of switch-on to manage expectations. Allow flexibility in Charging Order	24/10/2019	Open	L	L	M	L	1.33	1.33			Delay	Staff cost of 167k/month	5%				0	9	6	42	£42k = number of staff processing PCNs			
Risk 013		Changes to, or delays in providing, central charging infrastructure	Implementation	B&NES		M	H	L	H	6.00	6.00	2019	Reduce	Maintain close contact with JAQU to understand likely delivery timescales	24/10/2019	Open	M	H	L	M	4.00	4.00			Both	We have allowed 6 months in cost 10k/month delay cost	50%	0	140	70	0	6	3	10	Quantities revised/added	Wording and mitigation updated		
Risk 014		JAQU does not pay revenue costs through to the scheme being cash positive	Implementation	B&NES		M	M	M	M	4.00	4.00	2019	Accept	Early engagement with JAQU	24/10/2019	Open	M	M	M	M	4.00	4.00			Financial		25%	50	100	75						Changed wording		
Risk 015		Budget allocated for installation of signage in other LA or on HE network is insufficient	Implementation	B&NES		M	L	L	L	1.33	1.33	2019	Reduce	Early liaison with HE and neighbouring authorities to understand costs involved	24/10/2019	Open	M	L	L	L	1.33	1.33			Financial	10 signs x £1,750 - then 40% in here for risk	25%	0	7	3.5							Probability/likelihood revised	
Risk 016		Successful challenges to the process for making the Order	Implementation	B&NES		M	H	L	M	4.00	4.00	2019	Reduce	Involvement of legal in the project from an early stage to ensure we are following processes correctly. Early and ongoing engagement surrounding the formal consultation period	24/10/2019	Open	M	H	L	L	2.00	2.00			Delay	110k/month delay cost (75 project team + 35 lawyers)	25%				1	24	3	135	Delay cost changed			
Risk 017		Delays in obtaining JAQU funding for implementation (operational/revenue)	Implementation	B&NES		L	M	M	M	3.33	3.33	2019	Reduce	Maximise opportunities to complete FBC, based on the OBC outcome, for submission at the earliest opportunity following conclusion of the elections	24/10/2019	Open	L	M	M	M	3.33	3.33			Delay		50%				0	6	3	100	Moved from implementation. delay cost changed	Description updated		
Risk 018		Delays in obtaining JAQU funding for Clean Air Fund	Implementation	B&NES		L	M	M	M	3.33	3.33	2019	Reduce	Maximise opportunities to complete FBC, based on the OBC outcome, for submission at the earliest opportunity following conclusion of the elections	24/10/2019	Open	L	M	M	M	3.33	3.33			Delay		75%				0	6	3	100	Moved from implementation. delay cost changed	Description updated		
Risk 019		The ANPR camera installation takes longer, or costs more, than anticipated due to competing priorities for contractors	Implementation	B&NES	JAQU	L	M	M	M	3.33	3.33	2020	Mitigate	Commission contractor as early as possible to avoid clashes with other similar schemes	24/10/2019	Open	L	M	M	M	3.33	3.33			Delay	100k+75k/month delay cost as on critical path	12.5%				0	6	3	175				
Risk 020		The signage installation takes longer than anticipated due to competing priorities for contractors	Implementation	B&NES	JAQU	L	M	M	M	3.33	3.33	2020	Mitigate	Commission contractor as early as possible to avoid clashes with other similar schemes	24/10/2019	Open	L	M	M	L	1.67	1.67			Delay	We have allowed 0 months in cost as on critical path 75k/month delay cost	50%				3	9	6	100	Delay cost changed			
Risk 021		The ICT system integration takes longer, or costs more, than anticipated due to competing priorities for contractors (separate from centralised systems)	Implementation	B&NES	JAQU	L	M	M	M	3.33	3.33	2020	Mitigate	Commission contractor as early as possible to avoid clashes with other similar schemes	24/10/2019	Open	L	M	M	L	1.67	1.67			Delay	10k/month delay cost (not 75k because its not on critical path)	50%				0	9	6	10	Description added	Probability/likelihood revised		
Risk 022		Installation delayed due to clashes with other highway works, or requirement to integrate with other large works and major schemes	Implementation	B&NES		L	M	L	M	2.67	2.67	2019	Reduce	Gain understanding of planned highway works in advance of scheduling implementation works	24/10/2019	Open	L	M	L	L	1.33	1.33			Delay	10k/month delay cost	25.0%				0	9	6	100	Added words, delay cost changed	Probability revised		
Risk 023		Queen Square Traffic Management installation takes longer, or costs more, than anticipated due to competing priorities for contractors	Implementation	B&NES	JAQU	L	M	M	M	3.33	3.33	2020	Mitigate	Commission contractor as early as possible to avoid clashes with other similar schemes	24/10/2019	Open	L	M	M	L	1.67	1.67			Delay		50%				0	6	3	25	New risk	Probability revised		
Risk 024		Staff/skills shortage in B&NES results in delays to the project - at steady state delivery stage	Delivery	B&NES		M	M	M	M	4.00	4.00	2021	Reduce	Ensure that any project plans are supported by resource plans that include sufficient contingency allowance to accommodate any holidays, training, sickness, etc., ensure that the project	24/10/2019	Open	M	M	M	L	2.00	2.00			Financial	E60/PCN, 800PCN/day	13%	0	90	45							Quantities updated, E60/PCN, 50PCN/day	
Risk 025		Scheme is not sufficient to achieve air quality compliance by 2021 as anticipated	Delivery	B&NES		M	M	M	M	4.00	4.00	2021	Reduce	Sensitivity modelling to estimate potential error in assumptions. Allow flexibility in Charging Order to amend scheme parameters if necessary	24/10/2019	Open	M	M	M	M	4.00	4.00			Financial	Assume fine is based on Public Health impact assessment (costs TBC but assumed £5m)	5%	0	6000	1500							ESM Rationale based on Asbestos example - E123k/victim for asbestos x 40k (victims/people) x B&NES share of population (0.12%)	
Risk 026		JAQU does not underwrite costs once scheme is cash positive	Delivery	B&NES		M	M	M	M	4.00	4.00	2019	Accept	Early engagement with JAQU	24/10/2019	Open	M	M	M	M	4.00	4.00			Financial		75%	50	100	75							New risk	New risk
Risk 027		Mitigation scheme(s) is required due to diversionary impacts from Queen Square traffic management	Delivery	B&NES		M	L	M	M	3.33	3.33	2021	Accept	Monitor impacts of scheme and identify any issues at earliest opportunity	28/11/2019	Open	M	L	M	M	3.33	3.33			Financial		75%	0	250	125							New risk	New risk
Risk 028		Boundary amendment(s) is required due to political requirements or adverse impact from CAZ	Delivery	B&NES		M	L	M	M	3.33	3.33	2021	Accept	Monitor impacts of scheme and identify any issues at earliest opportunity	28/11/2019	Open	M	L	M	M	3.33	3.33			Financial		50%	0	120	60							New risk	New risk
Risk 029		Additional advanced signage is required on HE network	Delivery	B&NES		M	L	M	M	3.33	3.33	2021	Accept	Monitor impacts of scheme on network and routes into Bath. Maintain ongoing liaison with HE.	28/11/2019	Open	M	L	M	M	3.33	3.33			Financial		50%	0	112	56							New risk	New risk