



HAZARD ELIMINATION & RISK REDUCTION REGISTER

Document Number: B2420300 HERRR Rev1

Project Title: LDPAP - Barnton Connections

Project Number: BESP0023

Client: City of Edinburgh Council

Project Manager: [REDACTED]

Lead Designer: [REDACTED]

HSE CDM Advisor: [REDACTED]

Revision	Issue Date	Revision Description	Prepared Bv	Checked Bv	Approved Bv
1	19-Aug-22	Rev0	[REDACTED]	[REDACTED]	[REDACTED]
2	25-Mar-26	Rev 1	[REDACTED]	[REDACTED]	[REDACTED]

IB-HS-WI-0112-GB-F-01 Design Hazard Elimination and Risk Reduction Register
Rev 0
Effective Date: 01-MAR-2020

Introduction

This covers the requirements of BS EN 12100 Machinery Safety (Risk Assessments), EU Directives and CDM. This provides a means of recording mitigation and risk reductions actions taken.

All foreseeable Hazards for each discipline will be entered into the Hazard Elimination & Risk Reduction Register (HERR) by the Engineers and Designers.

The MOE shall appoint a single point of contact who will be responsible for managing and coordinating the Hazard / Risk Register to ensure completeness and consistency across the disciplines for the relevant project.

The discipline Lead Engineer(s) will be responsible for ensuring completeness and consistency for their discipline across each of the project.

The full completed risk register shall form part of the Technical File. CDM Designers residual risks shall be transmitted as per IB-HS-WI-0112-GB and to the HSE representative for wider communication.

Drawings and documents which contain significant risks shall reference this document in the drawings or document notes.

Hazard / Risk Register completion		
Column 1	Risk ID	Enter the Hazard/Risk number, this should be sequential.
Column 2	Formal Review Description	Identify what formal REVIEW the Hazard was identified at (from pull down menu): <ul style="list-style-type: none"> • Interactive Design Safety Session • Hazop Meeting • Hazid Meeting • Routine Design Team Meeting • Design Stage Meeting • Pre-Tender Design Review Meeting • Construction Phase Design Revision • CDM Stage gateway review
Column 3		Identify what phase of the project the Hazard applies to (from pull down menu): <ul style="list-style-type: none"> • C - Construction • M - Maintain/Clean • U - Use as a workplace • D - Demolish
Column 4	Activity	Describe the Activity to be undertaken where a Hazard may be present
Column 5	Potential Hazard	Describe the Hazard associated with the described activity
Column 6	Who is at Risk	Identify who is at risk against each associated activity (from pull down menu): <ul style="list-style-type: none"> • Construction • Commissioning • Operations • Maintenance • Demolition • Public • Students/Pupils • Staff.
Column 7	Probability	Determine the Probability of the unmitigated Hazard (from pull down menu). <ul style="list-style-type: none"> • 1 - Highly Unlikely • 2 - Unlikely • 3 - Possible • 4 - Likely • 5 - Highly Likely
Column 8	Worst Potential Severity (WPS)	Determine the Worst Potential Severity (WPS) of the unmitigated Hazard (from pull down menu). <ul style="list-style-type: none"> • 1 - Nil or slight injury / illness, property damage or environmental issue. • 2 - Minor injury / illness, property damage or environmental issue • 3 - Moderate injury or illness, property damage or environmental issue • 4 -Major injury or illness, property damage or environmental issue. • 5 - Fatal or long term disabling injury or illness. Significant property damage or environmental issue. • 10 - Multiple fatalities and catastrophic event

Column 9 Severity	Initial Risk Rating	Calculates the Initial Risk Rating of the unmitigated hazard (Probability x WPS) Automatic RAG for status 1 - 5 - Green 6 - 10 - Amber <10 - Red
Column 10 Risk	Discipline	Select the discipline raising the hazard (from pull down menu) <ul style="list-style-type: none"> • Architect • Mechanical • Electrical • Civil/Structural • Control / Instrumentation • Piping • HVAC • Commissioning • Non Jacobs Designer • Client • All Disciplines
Column 11	Design Measures To Eliminate Hazard	Describe the Design Measures to be implemented to Eliminate the Hazard as a FIRST CHOICE
Column 12	Design Measures To Reduce Risk	Describe the Design Measures to be implemented to Reduce the Risk associated with the Hazard SECOND CHOICE
Column 13	Residual Probability	Determine the Probability of the residual risk from the hazard (from pull down menu). Selection per column 7
Column 14	Residual WPS	Determine the Severity of the residual risk from the Hazard (from pull down menu). Selection per column 8
Column 15	Residual Risk Rating	Calculates the Residual Risk Rating from the hazard (Probability x WPS) Automatic RAG for status
Column 16	Residual Risk Description	Describe clearly the Residual Risk associated with the Hazard to be managed by those using the Design
Column 17	Included in Drawing No(s)	List the documents where the Residual Risk has been communicated to those using the Design
Column 18	Action By	State who the action is to be taken/completed (Name or Role)
Column 19	Target Date	Insert the initial target completion date here. This date should not be revised
Column 20	Revised Target Date	Insert the latest revised target completion date here.
Column 21	Date Action Complete	Insert the date the Action was completed - or was transferred to a subsequent action
Column 22	Tracker Status	Automatic RAG rating for status. GREEN indicates that the action is ongoing with time in hand. AMBER is imminently due and RED indicates due or overdue
Column 23	Comments	Insert comments here relating to current status, whether the action is fully closed out, or is subsumed into another action etc
Column 24	Primary Legislation	Identify the primary legislation the Hazard relates to (from pull down menu) default to CDM unless hazard is specifically related to ATEX, Machinery, PED, LVD, or EMC

The Multi Discipline Design Review shall confirm that the Hazard Elimination and Risk Reduction process has been completed and that the Residual Risks are acceptable to the Project.

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CRITICAL RISK SUMMARY REPORT



Project Number: BESPO023 Title LDPAP - Barton Connections
 Project Manager: [Redacted]
 Lead Designer: [Redacted]
 Date of Issue: 25/03/26

OVERVIEW OF CRITICAL RISKS ASSOCIATED WITH THE PROJECT. This identifies the top 7 hazards/risks associated with design, construction, operation, maintenance and demolition of the project

Comments	Residual Risk Summary
. Number of completed Mitigation Actions over latest reporting period	Number of 'High' risks 8
. Number of revised Mitigation Actions over latest reporting period	Number of 'Medium' risks 12
. Number of new risks over latest reporting period	Number of 'Low' risks 27
. Number of closed risks over latest reporting period	
. Number of risks with modified scores over latest reporting period	

Suggested areas / topics for comment:
 . Involvement and competency of project team members with risk management
 . Tabling and review of risk register at monthly Design Team Meeting
 . Quality and quantity of Mitigation Actions in place

Risk ID.	Activity	Potential Hazard	Design Measures to Reduce Risk	Residual Risk Description	Action By (Name or Role)	Tracker Status	Comments
1	Excavating or breaking ground	Potential for underground service strikes resulting in electrocution, fire or explosion	None. At present it is not possible to eliminate this hazard	Services may not be in the location they are noted on information provided or mapped at all, therefore there is a residual risk of	DESIGN TEAM / CEC	OPEN	0
2	Milling pavement materials	Presence of coal tar in existing pavement. Contact with hazardous waste during site	None. At present it is not possible to eliminate this hazard	Potential presence of coal tar in existing pavement	DESIGN TEAM / CEC	OPEN	0
3	Utility Diversions	Extents of utilities are currently unknown. If designs require utilities/services to be diverted, it may result in programme delays or increases in cost to the employer.	None. At present it is not possible to eliminate this Risk.	Risk remains the same, no change until utility information obtained as it may not be possible to	DESIGN TEAM / CEC	OPEN	0
15	Inflation of Material Costs	Risk cost of materials could make scheme unaffordable.	None. At present it is not possible to eliminate this Risk.	UK / World economic climate could change	DESIGN TEAM / CEC	OPEN	0
19	Objections to TROs/ DSOs	Scheme delayed or amended by objections	None. At present it is not possible to eliminate this hazard	Objections could lead to public hearing and consequent delays/ risk to delivery.	DESIGN TEAM / CEC	OPEN	Recommend project team plan ahead to assume a public hearing
26	Bus Stop By-passes	Potential lack of public acceptance until these become more common. Risk to design. Objections etc.	None. At present it is not possible to eliminate this Risk.	Public could continue to object	DESIGN TEAM / CEC	OPEN	0
28	Parking bays adjacent to cycle track	Motorists crossing the cycle track to the footway to/from their car come into conflict with cyclists. Related risk of trips and slips if level differences introduced between cycle track and footway.	None. At present it is not possible to eliminate this Risk.	Consider required physical mitigations such as bollards and kerb heights. Consider enforcement and	DESIGN TEAM / CEC	OPEN	
30	Inconsiderate parked cars	Risk that cars parking illegally on reduced width carriageway or cycle track could cause traffic congestion, visibility issues and possible collisions caused by frustration.	None. At present it is not possible to eliminate this Risk.	Consider required physical mitigations such as bollards and kerb heights. Consider enforcement and	DESIGN TEAM / CEC	OPEN	

Jacobs			5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Risk ID.	Phase	Activity	Potential Hazard	Person(s) Most at Risk	Prob	WPS	Initial Risk Rating	Discipline	Design Measures to Eliminate Hazards	Design Measures to Reduce Risk	Residual Prob	Residual WPS	Residual Risk Rating	Residual Risk Description	Included on Drawing No(s) or other doc. (give ref.)	Action By (Name or Role)	Target Date	Revised Target Date	Date Action Complete	Tracker Status	Comments	Primary Legislation	
Common Risks																							
1	C	Excavating or breaking ground	Potential for underground service strikes resulting in electrocution, fire or explosion	Construction	3	5	15	Civil / Structural	None. At present it is not possible to eliminate this hazard	All available service information should be made available to the contractor and known interactions identified and highlighted on key design drawings. Contractor should follow the guidance of HSG47 - Avoiding danger from underground services	2	5	10	Services may not be in the location they are noted on information provided or mapped at all, therefore there is a residual risk of strikes.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
2	C	Milling pavement materials	Presence of coal tar in existing pavement. Contact with hazardous waste during site clearance operations	Construction	3	4	12	Civil / Structural	None. At present it is not possible to eliminate this hazard	At the design stage, pavement milling should be minimised and the risk highlighted on key drawings. Contractor to undertake appropriate testing when on site to establish whether coal tar is present.	1	3	3	Potential presence of coal tar in existing pavement		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
3	C	Utility Diversions	Extents of utilities are currently unknown. If designs require utilities/services to be diverted, it may result in programme delays or increases in cost to the project	Project	3	4	12	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Existing utility information should be obtained as soon as possible to understand extents. Design work at Stage 3 should take cognisance of this and look to minimise the impact on existing utilities.	2	4	8	Risk remains the same, no change until utility information obtained as it may not be possible to mitigate.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
4	C	Traffic Modelling	If current traffic information is obsolete, it may result in poor traffic modelling and impacts on the local network.	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Recommend that at Stage 3 updated traffic data and analysis is undertaken to reflect changes to the junctions as well as the impact of related projects in West Edinburgh.	1	3	3	Traffic flows subject to change		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN	Stakeholder interest in this area suggests that public presentation of network modelling outputs will be of interest to decision makers	CDM	
5	C	Topographical Survey	Topographical survey data was captured in 2021. The current topographical survey extents may not be sufficient to capture side roads and any additional areas beyond the current scope or into private land such as the Golf Society if required. The data may also require updating to reflect changes on the ground such as the introduction of the 5G mast and related utility boxes at Barnton junction, changes to the business units and their accesses on Whitehouse Road etc.	Project	1	3	3	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Early identification of missing areas will help minimise delays to the programme and should keep costs lower. To be reviewed at Stage 3	1	2	2	Further delay to project implementation or extension of the route may mean updated Topo becomes obsolete		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
6	U	Impacts on traffic	Changes to junction/lane layouts may have negative impact on traffic operations, particularly for public transport, which may result in congestion, driver frustration and negative publicity	Public	2	2	4	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Refer to Item 4	1	2	2	Traffic flows subject to change		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
7	U	Ponding on carriageway/poor drainage	Ponding of surface water may occur due to surface depressions or blocked drainage which may impact cyclists and pedestrians.	Public	2	2	4	Civil / Structural	None. At present it is not possible to eliminate this Risk.	To be reviewed at Stage 3-4. Surface profile to be reviewed and amended as part of works, existing drainage should also be checked and jetted/cleaned, where required, as part of works.	1	2	2	Changes to flood risk profile		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
8	C	Surfacing defects	Surface in poorer condition/defects may be more extensive than anticipated when on site, this may require additional remedial works increasing project cost and programme	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	To be reviewed at Stage 3-4. Walkover visual survey to be undertaken and extents of resurfacing, if required, to be agreed with Client	1	3	3	Surface will deteriorate over time		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
9	C	Milling pavement materials	During milling operations, cobble stones may be found beneath surface layers which may result in increased construction costs and delays to programme	Project	1	2	2	Civil / Structural	None. At present it is not possible to eliminate this Risk.	To be reviewed at Stage 3.	2	2	4	To be reviewed at Stage 3		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
10	C	Conservation / Heritage	Risk to design conflicting with historic character of area resulting in objection from conservation groups. This could lead to design changes / higher costs.	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Early engagement with conservation groups and council heritage teams.	1	2	2	Could continue to object	Only known impacts are the Police Box at Barnton Junction and the Golf Society entrance pillars.	DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
11	C	Planning	Listed buildings. Scheduled monuments. Risk design conflicts with characteristics of local heritage. Planning permission could be required causing delay and expense.	Project	2	2	4	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Early discussions with CEC Planning team.	1	2	2	Other hidden consents	Police Box will need checked for listed status and planning process	DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
12	C	Archaeology	Risk of finding sites of significant archaeological importance. This could delay construction.	Project	1	3	3	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Consult with city archaeologist prior to drafting specific contract documents.	1	3	3	Still possible to find items of archaeological significance.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
13	C	Water Vision	Risk design doesn't conform with City Water Vision. Risk designing to meet CWV could change design adding delay and cost.	Project	2	2	4	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Early engagement with CEC Water vision team	1	4	4	Water Vision team could still reject. Water Vision policy change.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
14	C	Disinformation	Wide-ranging MIS-information surrounding active travel measures that have been known to circulate	Project	2	3	6	All Disciplines	None. At present it is not possible to eliminate this Risk.	Be proactive in providing high quality information to stem the influence	1	3	3	Those susceptible to believing mis-information may not accept other sources		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
15	C	Inflation of Material Costs	Risk cost of materials could make scheme unaffordable.	Project	3	4	12	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Value engineering if required. Maintain cost report. Undertake options framework at appropriate point.	2	4	8	UK / World economic climate could change		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
Project Design / Construction Risk - Scheme wide																							
16	C	Clash with other schemes in the area	Housing developments, A90 bus priority schemes, Cammo Walk/Bridge, Peatland Burn are the known schemes. Impacts could be conflicting priorities or delivery phasing impacting transport operation and stakeholder feedback	Project	3	3	9	Civil / Structural	None. At present it is not possible to eliminate this hazard	Coordination with CEC teams.	2	2	4	Other projects may be promoted. Changes to proposals		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
17	C	Clash with other schemes in the area	Communal Bin Review,	Project	2	2	4	Civil / Structural	None. At present it is not possible to eliminate this hazard	Coordination with CEC Bin Teams to determine if plans extend out to West Edinburgh	1	2	2	Other projects may be promoted. Changes to proposals		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
18	C	Clash with other schemes in the area	Road maintenance proposals clash of programming. Risk new surface could change conditions.	Project	2	2	4	Civil / Structural	None. At present it is not possible to eliminate this hazard	Coordination	1	2	2	Emergency works		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
19	C	Objections to TROs/ DSOs	Scheme delayed or amended by objections	Project	5	4	20	Civil / Structural	None. At present it is not possible to eliminate this hazard	Early engagement with public and stakeholders throughout scheme to identify potential risks. Engage potential objectors to determine mitigations prior to raising orders. Inform elected members of emerging risks. Further public engagement to demonstrate wider public feedback. Engagement plan to be considered at project scoping stage to ensure sufficient budget and visibility provided to delivery team to mitigate risks	3	3	9	Objections could lead to public hearing and consequent delays/ risk to delivery.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN	Recommend project team plan ahead to assume a public hearing	CDM	
20	C	Ecological Risks at Bughtin Burn	Potential for presence of watercourse foraging species Ecological assessment raises issues (such as presence of bats)	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this hazard	Otter and water vole targeted surveys should be conducted up to 200m upstream and downstream of the works area. A NatureScot licence may be required.	1	3	3	Endangered or invasive species and plants could be discovered.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
21	C	Developments	Various construction developments along the corridor may impact on the design of the scheme.	Project	1	1	1	Civil / Structural	None. At present it is not possible to eliminate this hazard	Liaisons with planning department.	1	1	1	To be reviewed at Stage 3		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
22	C	Cast iron gully gratings	Potential to upend cyclists due to level difference (where there is a depression) and rumble effect.	Public	3	3	9	Civil / Structural	None. At present it is not possible to eliminate this hazard	For example, replace cast iron gully pot with concrete encased plastic pot with Roding eye and cycle friendly cover. Adjust finished surface levels where necessary. Identify in contract spec.	1	2	2	CEC policy on changing gully pots.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
23	M	Cast iron Gully pots	Traditional gully pots do not have a roding eye making them difficult to jet clean. Risk of ponding / flooding.	Maintenance	3	2	6	Civil / Structural	Replace cast iron gully pot with concrete encased plastic pot with Roding eye and cycle friendly cover. Adjust finished surface levels where necessary	Replace cast iron gully pot with concrete encased plastic pot with Roding eye and cycle friendly cover. Adjust finished surface levels where necessary	1	2	2	CEC policy on changing gully pots.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
24	U	Continuous Footways	Continuous footways are a new concept. There is a risk of motorist / pedestrian conflict.	Public	3	3	9	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Consistent design. Adequate road markings. Keep up to date with national/local guidance. At Stages 3-4 consider public communication plan to explain changes	1	3	3	Users may continue to disregard highway code.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	
25	U	Bus Stop By-passes	Bus stop by-passes are a new concept. There is a risk of cyclist / pedestrian conflict	Public	3	3	9	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Consistent design. Adequate road markings. Keep up to date with national/local guidance. At Stages 3-4 consider public communication plan to explain changes	1	3	3	Pedestrian and cyclist non compliance.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM	

Risk ID.	Phase	Activity	Potential Hazard	Person(s) Most at Risk	Prob	WPS	Initial Risk Rating	Discipline	Design Measures to Eliminate Hazards	Design Measures to Reduce Risk	Residual Prob	Residual WPS	Residual Risk Rating	Residual Risk Description	Included on Drawing No(s) or other doc. (give ref.)	Action By (Name or Role)	Target Date	Revised Target Date	Date Action Complete	Tracker Status	Comments	Primary Legislation
26	C	Bus Stop By-passes	Potential lack of public acceptance until these become more common. Risk to design. Objections etc.	Project	4	4	16	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Consistent design. Adequate road markings. Keep up to date with national/local guidance. At Stages 3-4 consider public communication plan to explain changes	3	4	12	Public could continue to object		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
27	U	Bus Stop Locations/ layout	Potential lack of operator, passenger, local resident acceptance. Risk that objections to bus stop relocation could result in sub-optimal changes to the end design for users.	Public	4	2	8	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Full engagement process	2	2	4	Public could continue to object		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
28	U	Parking bays adjacent to cycle track	Motorists crossing the cycle track to the footway to/from their car come into conflict with cyclists. Related risk of trips and slips if level differences introduced between cycle track and footway. <i>Especially for those with mobility issues</i>	Public	4	3	12	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Wide buffer zone between carriageway kerb and cycle track. Footway and cycle track at the same level past parking area. Cycle track speed control measures - consider in further detail at Stage 3. Coloured material to differentiate surfaces	2	3	6	Public could continue to misuse new infrastructure.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
29	U	Speed limit	Existing speed limit of 30mph on Whitehouse Rd. Design assumes the proposed speed limit change of 20mph is implemented. If this does not happen prior to construction there may be additional risks not presently considered to date.	Public	3	3	9	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Review at Stage 3-4 to co-ordinate implementation	3	3	9	Drivers may continue to speed		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
30	U	Inconsiderate parked cars	Risk that cars parking illegally on reduced width carriageway or cycle track could cause traffic congestion, visibility issues and possible collisions caused by frustration.	Public	4	4	16	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Consider required physical mitigations such as bollards and kerb heights. Consider enforcement and communications regime to reinforce the impacts of inconsiderate parking, particularly in the first year.	3	2	6	Inconsiderate driver behaviour may continue.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
31	C	Traffic Management	Potential for significant impacts to local road network during construction if progressed without reference to adjacent schemes which may result in increase in environmental issues - congestion, noise, fumes, and both driver and local resident frustration	Public	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Comprehensive traffic management plan and project programming. Stakeholder / public communications and publicity.	1	3	3	Potential for congestion remains but should be reduced if managed properly.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
32	C	Personnel changes.	Loss of key personnel resulting in loss of knowledge.	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Succession plan. Adequate record keeping. Handover notes.	2	2	4	Handover notes could be lost		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
33	C	Staff resources	Lack of specialist (e.g. signalling) resources affecting delivery of project.	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Sharing resources between CEC wide teams and procurement timelines considered where required to acquire design resources	1	3	3	To be reviewed at Stage 3		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
34	C	Funding	Risk funders could change standards, or funding streams resulting in redesign.	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Maintain regular contact with funders	1	3	3	To be reviewed at Stage 3		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
35	C	Political Changes	New local authority / national gov policy and funding budgets could cause change in direction of delivering active travel schemes.	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Regular briefings to elected members. Monitoring political will.	2	2	4	Stakeholder opposition		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
36	C	Changes in city transport strategy. Eg Circulation plan, City Mobility Plan and City Plan.	Project no longer aligns with strategies and is deprioritised.	Project	1	5	5	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Keep in contact with other CEC teams.	1	5	5	Proposals don't fit with other plans.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
37	M	New green spaces	Maintenance of green spaces causing new burden to council. Risk CEC budgets do not allow for sufficient maintenance.	Public	2	2	4	Civil / Structural	Don't build green spaces	Adequate maintenance programme put in place by CEC.	1	2	2	council maintenance budgets		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
38	C	Historical Environment	The historical environment present may create constraints to the construction works.	Construction	2	2	4	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Review at detailed design stage by historic environment officer.	2	1	2	Historic officer could view issues not compatible.		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
Project Design/Construction Risks - Location Specific																						
39	C	Transition point at southern end of route - drivers required to deflect horizontally	Creates a new horizontal deflection for northbound drivers that could create confusion or conflict.	Project	2	4	8	Civil / Structural	Don't implement scheme	Consider at Stage 3-4 the length and angle to the kerb transitions and markings. Consider additional mitigation measures required	1	4	4	remains a new feature being introduced		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
40	U	Cammo Gardens Junction Drivers turn right from Maybury Rd north contrary to right turn ban	causing southbound congestion potentially backing up into Barron Junction. Also turns may conflict with northbound drivers and pedestrians and cyclists who are not expecting the manoeuvre	Public	2	4	8	Civil / Structural	Allow space for right turn separate to southbound movement by reducing or removing space for other ped/ cyclist or northbound movements	Hazard has been designed out but drivers may contravene regulation. Consider at Stages 3-4 adequate signage and road markings. Consider additional central island to reduce likelihood	1	4	4	non compliance could continue		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
41	U	Cammo Gardens Junction Drivers turn right from Pinegrove Gardens	Right turning vehicles coming into conflict with Maybury Road traffic or block north and southbound movements when traffic queuing prevents turn to clear.	Public	3	3	9	Civil / Structural	Central island to prevent right turns in and out of Pinegrove Gardens or incorporate Pinegrove Gardens arm into Cammo Gardens signal controlled junction	Co-ordination of signal timings between Cammo Gardens and Barron Junction to provide gaps within Gap acceptance tolerances	1	3	3	non compliance could continue		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
42	U	Delay in relevant permissions to permit Police box being moved	Delay to project implementation or project is implemented and Police box remains in place, thereby introducing risk to users	Public	2	3	6	Civil / Structural	Remove a traffic lane to realign cycle track and footway	Programme accordingly to ensure Police Box can be moved in time	1	3	3	Planning application refused		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
43	U	Barron Junction Removing Right turn on the southeast corner	Vehicles attempt to continue making the right turn cutting across traffic and causing conflicts/congestion	Public	2	4	8	Civil / Structural	Central island to prevent right turns where central hatching is	Consider signing. Road markings and/or central island and/or ahead arrow for green aspect on signals	1	4	4	Non compliance		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
44	U	Utility Access on the southwest corner of Barron Junction	Utility access would be from within the cycle track posing a possible conflict	Maintenance	2	3	6	Civil / Structural	Change utility access to be from footway/verge	Liaise with council/utility company to advise operators of new requires and how to mitigate risk	1	3	3	Human error		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
45	C	Opposite Barton Grove Utility upgrades	Upgrades to existing utility equipment opposite Barton Grove impacts the design and selected alignment	Project	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Early review at next stage	1	3	3	Change in design and visibility of impending upgrades		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
46	U	Southern access to Burgess Society	Long continuous footway compared to previous carriageway lengths the time that a vehicle will spend crossing the footway creating prolonged conflict point/time	Public	2	3	6	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Material choice to emphasise pedestrian priority and ensure that level differences minimise traffic entry speed appropriately	1	2	2	driver behaviour with not following priority		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
47	U	Northern exit from Burgess Society	Users of the society may be unaware of the changes to the infrastructure after construction resulting in conflicts	Public	2	4	8	Civil / Structural	Close exit	Appropriate signing and markings to alert users. Communication plan tailored to drivers to enhance their learning and understanding	1	3	3	Human error		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM
48	U	Whitehouse Road north of the commerce	Gradients can pose an issue with cycling speeds and greatly increase them and cause a larger speed differential	Public	3	3	9	Civil / Structural	None. At present it is not possible to eliminate this Risk.	Use of appropriate marking to remind cycles to reduce their speed and centre line prominence	2	3	6	Cycle speeds could remain high		DESIGN TEAM / CEC	TBC	TBC	TBC	OPEN		CDM



Project Name:	LDPAP - Barnnton Connections
Project Number:	BESPO023
Client:	City of Edinburgh Council

**HAZARD ELIMINATION & RISK REDUCTION
SET UP PAGE**

PERSON AT RISK	DISCIPLINES
Construction	Architect
Commissioning	Mechanical
Operations	Electrical
Maintenance	Civil / Structural
Demolition	Control & Instrumentation
Public	Piping
Students/Pupils	HVAC
Staff	Commissioning
Project	Non Jacobs Designer
Client	Client
	All Disciplines

Review List
1: Interactive Design Safety Session
2: HAZOPS Meeting
3: HAZID Meeting
4: Routine Design Team Meeting
5: Design Stage Review
6: Pre-Tender Design Review
7: Construction Phase Design Design Revision
8: CDM Stage Gateway Review

Legislation
CDM
ATEX
Machinery
PED
LVD
EMC

Severity of Injury	
1	Nil or slight injury / illness, property damage or environmental issue.
2	Minor injury / illness, property damage or environmental issue.
3	Moderate injury or illness, property damage or environmental issue.
4	Major injury or illness, property damage or environmental issue.
5	Fatal or long term disabling injury or illness. Massive property damage or environmental issue.
10	Multiple fatality and catastrophic event

Probability	
1	Highly Unlikely
2	Unlikely
3	Possible
4	Likely
5	Highly Likely

Residual Risk
Yes
No