

Project/Contract Description	Nelson Future Access Project DBC	NZTA Lead	Ryan Palmer
Contract ID	2018830	Supplier Lead	Graeme Doherty
Contract Value	To be inserted	Supplier Risk Mgmt. Specialist (if applicable)	Adam Ashford

Contract Risk Register

Risk Identifier	Date raised (dd/mm/yyyy)	Risk Description (include whether this is a threat or an opportunity)	Risk Cause(s)	Risk Consequence(s)	Risk Owning Organisation	Risk Owner	Controls	Current Risk Likelihood	Current Risk Consequence	Consequence Category	Current Controlled Risk Level	Level of risk acceptable, when compared to Risk Tolerance Threshold (Y/N)	Planned Risk Trmt Actions <i>Note: If more than one treatment action, either: - Include numbers to identify separate treatments, or: - Refer to Actions Register on separate tab</i>	Treatment Owner(s)	Planned Treatment Implementation Date(s) (dd/mm/yyyy)	Risk Treatment Progress Updates	Residual (Target) Risk Likelihood	Residual (Target) Risk Consequence	Residual (Target) Risk Level	Risk status
1	2/05/2019	Programme overruns due to late start and new GPS - Threat - Programme for SSBC Rocks Road will not be met.	Project started late and new GPS could lead to changes from PBC	Rocks Road SSBC will not be complete in time for local elections and Rocks Road pre implementation activities are delayed.	AECOM/NZTA	GD/RP	Project Programme	Likely	Extreme	Delivery	Critical	N	Programme to be revised to meet original August dates for RR. Resources to be increased and activities to be overlapped to meet reduced durations of activities.	GD(AECOM)/RP(NZTA)		Governance group program takes account of the late start. GPS could still lead to programme overruns. RR no longer single business case now combined with DBC.	Likely	Severe	Critical	Impacted
5	2/05/2019	Rocks Road Short term Linked to long term solution - Opportunity - link the short to medium term Rocks Road enhanced walk/cycle corridor to the long term intervention	if the DBC identifies long term solution short to medium term interventions can be made.	Cost of implementing the long term solution will be reduced.	AECOM/NZTA	GD/RP	RR SSBC and NFAP DBC	Likely	Moderate	Cost	High	N	Programme to be revised to meet original August dates for RR. Resources to be increased and activities to be overlapped to meet reduced durations of activities.	GD(AECOM)/RP(NZTA)		RR is now combined with DBC.	Likely	Severe	Critical	Closed
11	2/05/2019	World Class Waterfront definition and funding - Threat - The definition of a "World Class Waterfront" is not agreed and there is insufficient funding (from all sources including NZTA/NCC/Private) to achieve it.	That the definition of a "World Class Waterfront" is subjective and the level of funding for placemaking is not guaranteed to achieve a "World Class Waterfront".	The Rocks Road SSBC may be delayed and funding not secured to achieve a "World Class Waterfront".	AECOM/NZTA	GD/RP	Project Programme, Project Budget, Project Brief	Almost certain	Severe	Delivery	Critical	N	Guidance on the definition of a WCW objective to be sought in statutory documents. Literature search of overseas examples of WCW. Workshop with key Stakeholders their expectations for WCW. Different options and costs to be considered during optioneering.	GD(AECOM)/RP(NZTA)		Need to understand the transport system within a World Class Waterfront.	Likely	Severe	Critical	Live-Treat
2	2/05/2019	Programme overruns due to RR consultation - Threat - Problem definitions and potential solutions on RR change that further consultation will be required.	That the new GPS, increased SLR resilience issues evidence, and new modelling may change the problem definition.	That the SSBC for Rocks Road is delayed by the need for further consultation and the August completion date is not met	AECOM/NZTA	GD/RP	Project Programme, Stakeholder and Public Engagement Plan	Likely	Severe	Delivery	Critical	N	Problems, Opportunities and Benefits Workshop to be held. To review the Problem statements. Consider using previous consultation feedback on other projects such as Haven Precinct instead of new consultation.	GD(AECOM)/RP(NZTA)		RR is now combined with DBC.	Likely	Moderate	High	Closed
3	2/05/2019	Transport modelling shows new problems - Threat - The new transport model shows new problems or scale/timing is different.	That the 2015 traffic modelling in the PBC is out of date and there are new growth forecasts.	That the timing and scope of the project options may change from previous PBC	AECOM/NZTA	GD/RP	TRACKS Growth Forecasts, Transport Modelling	Likely	Severe	Public/Media	Critical	N	Updated modelling using SATURN, New	GD(AECOM)/RP(NZTA)		Base model is near completion.	Likely	Moderate	High	Impacted
10	2/05/2019	New Growth forecasts show NSL is required earlier - Threat - Risk that new growth forecasts show that Nelson Southern Link Road is required before the early 2030s.	Growth forecasts are higher than previous PBC.	That NSL is required earlier or that access to the Nelson CBD is worse sooner than anticipated.	AECOM/NZTA	GD/RP	TRACKS Growth Forecasts, Transport Modelling	Likely	Severe	Stakeholders	Critical	N	Modelling to be updated to latest growth forecasts	GD(AECOM)/RP(NZTA)		Growth forecasts for the modelling is now agreed by NZTA and NCC.	Likely	Moderate	High	Live-Treat
8	2/05/2019	Safety work Delayed - Threat - That the NFAP will delay urgent safety work in the study area.	NFAP outcomes could affect safety interventions in the study area.	Safety work is delayed and there is a higher level of accidents in the study year in the short term	AECOM/NZTA/NCC	GD/RP/MP	Short Term Project List	Likely	Severe	Health & Safety	Critical	N	Short term project list to be developed early to allow urgent work to proceed if justified	GD(AECOM)/RP(NZTA)/MP(NCC)		Deliverable 1 Project list complete - Includes urgent safety work.	Likely	Moderate	High	Live-Treat
6	2/05/2019	Climate change and sea level rise more significant - Threat - Climate change impacts including sea level rise and storms are greater than expected and happen sooner.	Climate change could occur faster than previously assumed.	Rocks Road resilience and reliability is compromised earlier than expected	AECOM/NZTA	GD/RP	Project programme, Use mfc 3 scenarios and consider high	Almost certain	Moderate	Environmental	High	N	RR SSBC DBC to use latest sea level rise forecasts to inform mitigation options considered. E.g. Consider bringing forward implementation of NSL	GD(AECOM)/RP(NZTA)		Wave overtopping study is underway.	Likely	Severe	Critical	Live-Treat
7	2/05/2019	Network Operating Hierarchy Changes - Threat - That the Network Operating Hierarchy to support a World Class Waterfront and vibrant CBD will reclassify some existing routes.	Potential change to NOH	That measures to achieve the city vision will put further pressure on the SH and Waimea Road.	AECOM/NZTA	GD/RP	Project Programme	Likely	Severe	Cost	Critical	N	NOH to be developed as part of NFAP and incorporated in DBC outcomes.	GD(AECOM)/RP(NZTA)		NOH workshop has been held.	Likely	Minor	Medium	Live-Treat
18	2/05/2019	Consultation Fatigue - Threat - Risk Nelson community will turn off because of over saturation of this topic.	Cause of the threat is too much consultation in the past without getting any decision	Consequence of the threat is consultation results in a lack of public interest in the project.	AECOM/NZTA	GD/RP	Consultation and Engagement Strategy	Likely	Severe	Stakeholders	Critical	N	Tailor programme and community engagement phases to work within this constraint	GD(AECOM)/RP(NZTA)		Stakeholder engagement plan has been agreed and risk taken into account.	Likely	Moderate	High	Live-Treat
22	2/05/2019	Nelson RM Plan is not complete - Threat - Risk that the Nelson RM Plan review is not complete in the event we seek to consent a large infrastructure project.	Cause of the threat is timing of Nelson RM Plan	Consequence of the threat is this will create a high level of uncertainty for all parties, create delays, incur additional costs and add opportunities for appeals. RM Plan process becomes an early hearing for NSL preferred option.	AECOM/NZTA	GD/RP/SD	Consultation and Engagement Strategy	Likely	Severe	Stakeholders	Critical	N	Liaise with NCC Planners and Councilors to determine the relationship between the NFAP investigation and the NRMP review to reduce conflict, unnecessary duplication of community engagement and support NCC's RMA Plan review to facilitate comprehensive planning solutions for affected areas.	GD(AECOM)/RP(NZTA)/SD(MD)			Likely	Moderate	High	Live-Treat
19	2/05/2019	NZTA inconsistent position on NPR and NFAP - Threat - Risk that the Transport Agency adopts inconsistent positions between the Nelson Plan Review project and the Nelson Southern Link Investigation.	Cause of the threat is timing of Nelson RM Plan before NFAP is complete.	Consequence of the threat is it makes obtaining consents more difficult	AECOM/NZTA	GD/RP	Protocols Management Plan	Likely	Severe	Legal/Compliance	Critical	N	Protocols Plan developed to reduce risk of inconsistent position	GD(AECOM)/RP(NZTA)		Protocols plan to be monitored and updated as necessary.	Likely	Moderate	High	Live-Treat
20	2/05/2019	Technical Knowledge Challenged - Threat - Risk that the technical knowledge of the project team is challenged and inadequate.	NZTA's procurement process does not provide suitable resource.	Consequence of the threat is that NFAP evidence is challenged in the consent process.	AECOM/NZTA	GD/RP	NZTA RFT specifies nominated consultant. Protocols Management Plan	Likely	Severe	Legal/Compliance	Critical	N	Legal advice has been sought as to expertise of project team members, and advised that Stephen Daysh be bought onto the project team. Make further changes to team if appropriate.	GD(AECOM)/RP(NZTA)		Stephen Daysh is facilitating the PRG workshop in August.	Likely	Moderate	High	Live-Treat
21	6/05/2019	Cost estimates inadequate - Threat - Risk that the cost estimates are not adequate for inclusion in the NLTIP.	Cause of the threat is design is not adequately detailed and cost estimates not sufficiently refined.	Consequence of the project is not included in the NLTIP.	AECOM/NZTA	GD/RP	Cost estimates, SM014	Likely	Severe	Cost	Critical	N	The cost estimates and economics of the proposal will be independently audited	GD(AECOM)/RP(NZTA)			Likely	Moderate	High	Live-Treat
9	6/05/2019	Projects proceed that are affected by NFAP - Threat that projects proceed that are subsequently affected by NFAP.	Cause of the threat is that urgent projects may need to proceed ahead of NFAP being completed.	Consequence of the threat is that some projects that are completed may not be needed or may need to be altered.	AECOM/NZTA	GD/RP	Project Programme, Projects list	Likely	Severe	Delivery	Critical	N	Short term project list to be developed early to allow urgent work to proceed if justified. List of work not affected by NFAP to be produced and monitored 6 monthly	GD(AECOM)/RP(NZTA)		Deliverable 1 Project list complete. Ongoing monitoring to occur.	Likely	Moderate	High	Live-Treat
13	6/05/2019	Local Body Elections - Threat - Local body elections could delay the project.	Cause of the threat is local body elections are due in September 2019.	Consequence of the threat is that the NFAP is delayed due to distractions caused by elections and reduced activity from	AECOM/NZTA	GD/RP	Stakeholder	Likely	Severe	Delivery	Critical	N	Maintain programme for RR SSBC to be complete before election. Tailor programme and community engagement phases to work within this constraint	GD(AECOM)/RP(NZTA)		Rocks road SSBC is now combined into DBC risk still remains.	Likely	Moderate	High	Live-Treat
14	6/05/2019	Funding Cap on \$ - Threat - Risk that the \$ for NFAP are capped due to funding restrictions.	Cause of the threat is funding availability is tight	Consequence of the threat is NFAP needs to work within existing budget.	AECOM/NZTA	GD/RP	Consultant's Agreement, Weekly Meetings	Likely	Severe	Cost	Critical	N	Take a risk based approach / amend scope as we go to meet budget. Minimise costs on overhead compliance tasks such as monthly reports	GD(AECOM)/RP(NZTA)			Likely	Moderate	High	Live-Treat
15	6/05/2019	Rocks Road Political Focus - Threat - Risk that the media and political focus on Rocks Road walking and cycling components of the investigation overshadows the wider DBC.	Cause of the threat is local elections in September and heightened public interest in RR	Consequence of the risk is that Rocks Road walking and cycling components of the investigation overshadow the wider DBC resulting in wider transport benefits not being realised.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan, Communications Strategy.	Likely	Severe	Public/Media	Critical	N	A communications strategy will be developed to manage this.	GD(AECOM)/RP(NZTA)		Rocks road SSBC is now combined into DBC risk still remains.	Likely	Moderate	High	Live-Treat

16	6/05/2019	Mode neutral support - Threat - Risk that there may be little community support and/or lack of Council support for network optimisation/mode neutral approach.	Cause of the threat is existing high car dependency and low PT/Walking and cycling mode share in Nelson	Consequence of the risk is that interim optimisation measures/mode neutral approach not implemented and which brings forward the need for a new route.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan.	Almost certain	Severe		Critical	N	Need to demonstrate to Community / NCC that unless network optimisation / mode neutral approach is considered and investigated then there would be little chance of consenting success for any new route	GD(AECOM)/RP(NZTA)		Likely	Severe	Critical	Live-Treat
12	6/05/2019	Revocation - Threat - revocation is not adequately addressed during the DBC.	Cause of the threat is DBC focus is on potential improvements rather than revocation.	The consequence of the threat is that revocation requirements are a surprise at the end of the DBC.	AECOM/NZTA	GD/RP	Project Scope, Projects List	Likely	Severe		Critical	N	Include revocation discussion as we progress so no surprises at the end.	GD(AECOM)/RP(NZTA)		Possible	Moderate	Medium	Live-Treat
23	6/05/2019	Multi Agency Project - Threat - Some of the operation risks will fall outside of the Transport Agency's sphere of responsibility (e.g. changing land use or changing school hours).	Cause of the threat is limited Transport Agency Powers.	Consequence of the threat is that solutions are sub optimal.	AECOM/NZTA	GD/RP	NZTA Legislation	Likely	Severe	Delivery	Critical	N	Collaboration with those that have responsibility will be undertaken through the DBC process. DBC will need to be integrated across the delivery of the programme with the wider land use and transport system.	GD(AECOM)/RP(NZTA)		Likely	Moderate	High	Live-Treat
17	6/05/2019	Consenting Risk - Threat - New route option presents significant consenting challenges.	Cause of the threat is the history of the route being declined in the 2004 Environment Court Decision	Consequence of the threat is that it is more difficult to obtain consents for the project as the WCW, resilient access and vibrant CBD objectives are not achieved or delayed.	AECOM/NZTA	GD/RP	Consenting Process, Environment Court Hearing	Almost certain	Severe	Legal/Compliance	Critical	N	It is considered that this risk is manageable given the stronger case for the project, and the extensive stakeholder and community engagement that will be carried out to understand effects and how they may be mitigated. A full assessment of the options will be undertaken as part of the DBC investigation.	GD(AECOM)/RP(NZTA)		Likely	Moderate	High	Live-Treat
4	2/05/2019	Differing views on the form and function of the city - Threat - Risk that significantly different views on form and function of the transport network disrupt the pathway forward. A few loud voices will take over the public debate, obscuring the content we want to get out there.	Cause of the threat is diversion of the project by opposition groups, climate change impacts or technological disruption.	Consequence of the threat is a delay to completion of the DBC and implementation of the projects recommended to achieve the outcomes sought.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement, Robust business case process including IQA.	Almost certain	Severe	Delivery	Critical	N	Public engagement. Robust business case process. Early engagement with IQA reviewer. Talk directly to people, place adverts in the paper to ensure the factual NZ Transport Agency messages are in the mix. Specifically meet with the different factions to work through the project process, so that they ask questions directly to the Agency, reducing their need to go to the media (i.e. be available).	GD(AECOM)/RP(NZTA)		Likely	Moderate	High	Live-Treat
26	22/05/2019	Late Iwi Liaison - Threat - Risk of involving Iwi too late leading to lack of support for the project in later stages.	The cause of the threat is that the project programme is driven by the business case process which puts other project activities ahead of Iwi consultation.	The consequence of the threat is that Iwi may not support the outcomes of the detailed business case.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan	Likely	Severe	Stakeholders	Critical	N	Early Iwi engagement including making early contact to inform them of the project and give advance notice of upcoming engagement.	GD(AECOM)/RP(NZTA)		Likely	Moderate	High	Live-Treat
38	22/05/2019	Extent of project - Threat - There is a threat that the extent of the project area does not extend far enough to cover areas which may effect the Project particularly Richmond and other areas under Tasman DC.	The cause of the threat is that the project area has been too tightly defined in the project scope to limit the work required in the project	The consequence of the threat is that the analysis of options in the study area may not fully consider the effects of what happens in other areas.	AECOM/NZTA	GD/RP	RFT and Traffic Modelling scope	Almost certain	Moderate	Stakeholders	High	N	Further discussions with the steering Group to consider the implications	GD(AECOM)/RP(NZTA)		Possible	Moderate	Medium	Live-Treat
39	10/05/2019	Reputation risk - Threat - there is a threat that the reputation of the partner organisations of NZTA, NCC, and TDC reputations are adversely impacted if the project does not meet its objectives. For example if the partners are not in agreement on the way forward or if the project is seen to delay real action further.	The cause of the threat is that the project is complex and the outcomes are uncertain and the project is of high public interest.	The consequences of the threat is a negatively impacted reputation for the organisations involved which may lead to a lack of public support for the proposed way ahead.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan	Likely	Severe	Public/Media	Critical	N	Further discussions with the steering Group to consider the implications	GD(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
39	24/06/2019	PT Modelling Risk - Threat - there is a threat that the future PT mode share is modelled incorrectly due to uncertainty about future PT demand.	The cause of the threat is that the project is that PT mode share is currently low and modelling future uptake involves uncertainty	The consequences of the threat is that future programmes involving PT may over estimate the demand and the outcomes sought are not met and benefits less than predicted.	AECOM/NZTA	GD/RP	Transport Modelling	Likely	Moderate	Stakeholders	High	N	Carry out modelling sensitivity test for different PT scenarios. Select best modelling method to estimate future PT mode share.	GD, NH(AECOM)/RP(NZTA)		Possible	Moderate	Medium	Live-Treat
40	10/07/2019	Outcomes of project - Threat - information previously gathered is no longer relevant.	The cause of the threat is that the context of the project has changed and previous information is no longer robust enough or current	The consequences of the threat is approval of the detailed business case will be delayed.	AECOM/NZTA	GD/RP	Evidence Gathering	Likely	Severe	Delivery	Critical	N	Assumptions and evidence well documented and clearly linked (Problems, benefits, solutions).	GD, NH(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
41	10/07/2019	Credibility of evidence - Threat - contradictory evidence from different sources.	The cause of the threat is that there is contradictory evidence, different sources of truth, RMA challenge risk.	Evidence used will be inaccurate and/or inconsistent and difficult to prove credibility to decisionmakers.	AECOM/NZTA	GD/RP	Evidence Gathering, Transport Modelling	Likely	Severe	Stakeholders	Critical	N	Assumptions and evidence well document and clearly linked (Problems, benefits, solutions).	GD, NH(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
42	10/07/2019	Transport model under/overestimate - Threat - Transport model is inaccurate in estimating future usage.	Transport model's input and assumptions under/overestimate (Land use, age cohort growth forecast, migration demographic)	The consequences of the threat is that the transport model will not accurately forecast the traffic in Nelson	AECOM/NZTA	GD/RP	Transport Modelling	Likely	Severe	Stakeholders	Critical	N	Scenario and sensitivity testing to be carried out on traffic model. Clearly articulate assumptions & limitations & method of creating model. Peer review (ongoing)	GD, NH(AECOM)/RP(NZTA)		Possible	Moderate	Medium	Live-Treat
43	10/07/2019	Deliverability of solution within funding envelope - Threat - There is a threat that the solution will not be able to be delivered within timing or budget.	Options involving significant infrastructure may not be affordable due to limitations on funding	The project is delayed or sub optimal options are implemented	AECOM/NZTA	GD/RP	NZTA NLTP and 10 year plan, NCC LTP	Likely	Extreme	Stakeholders	Critical	N	Communications planning to manage expectations. Build affordability threshold into MCA analysis, including local share	GD, NH(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
44	10/07/2019	Future proofing evidence base - Threat - There is a threat that the solution is not robust enough for future deliverability.	The cause of the threat is that tying the business case to current Government Policy risks future deliverability (Strong evidence base) and longevity.	The project is delayed or becomes out of date and needs to be updated	AECOM/NZTA	GD/RP	TRACKS Growth Forecasts, Transport Modelling	Likely	Moderate	Stakeholders	High	N	Assumptions and evidence well document and clearly linked (Problems, benefits, solutions).	GD, TB(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
45	10/07/2019	Quality of documentation support -	The cause of the threat is that quality of documentation supporting the business case is not adequate	The consequences of the threat is that the business case will not be accurate and not have a strong evidence base to support it	AECOM/NZTA	GD/RP	Evidence base	Likely	Severe	Legal/Compliance	Critical	N	Assumptions and evidence well document and clearly linked (Problems, benefits, solutions).	GD(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
46	10/07/2019	Heritage aspects of existing assets(Rail, culverts, sea wall) - Threat	Some heritage aspects are not documented in existing evidence base	Delay to finalisation of the business case	AECOM/NZTA	GD/RP	Evidence base, Stakeholder engagement	Likely	Severe	Legal/Compliance	Critical	N	Review of heritage maps (Doc, Iwi, Heritage NZ, NCC) - include in constraints mapping. Engage with local heritage focused groups (e.g. Amanda Young) throughout project lifecycle. Test constraints map in consultation process.	GD(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
47	10/07/2019	Poor consultation (proper mix, messaging, Iwi engagement) - Threat - There is a threat that the engagement with Iwi, public, and other stakeholders will go poorly.	The cause of the threat is that poor planning and structure for engagement. There is a mix of how we get the messages out.	The consequence of the threat is that stakeholders will not support the outcomes of the DBC and the DBC may incorrectly address these issues.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan, Communications Strategy.	Likely	Severe	Stakeholders	Critical	N	Stakeholder and engagement plan to cover risk	GD, IW/SD(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
48	10/07/2019	Richmond NOF out of step with NFAP - Opportunity - There is an opportunity that the Richmond NOF is being worked on a different timeframe than NFAP.	The cause of this opportunity is that both projects are being worked on and coordinating the timing and interface on these would provide a more robust approach.	The consequence of this opportunity is that the Richmond NOF may result in a more robust NFAP DBC.	AECOM/NZTA	GD/RP		Likely	Moderate	Delivery	High	N	Align function LoS between two NOH/NOF. Highlight any differences between two decisionmakers	GD, NH(AECOM)/RP(NZTA)		Likely	Moderate	High	Live-Treat
49	10/07/2019	Sea level rise - Distracts NFAP/Narrative - Threat - Risk that comments on sea level rise will disrupt path moving forward and affect the transportation narrative of NFAP.	The cause of this threat is that the sea level and climate change considerations will affect the narrative and distract from other project outcomes.	The consequence of this threat is that the project may be delayed and implementation to resolve the problems will be difficult.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan, Communications Strategy.	Likely	Severe	Stakeholders	Critical	N	Align the communications and messaging to public - NFAP & Climate change adaptation.	GD(AECOM)/RP(NZTA)		Possible	Severe	High	Live-Treat
50	10/07/2019	Perceived or actual political bias - Threat - Risk that there is perceived political bias or actual bias through the process & how politicians engaged through process.	The cause of the threat is that politicians seeking re-election may be biased during the DBC process and affect the views of the public.	Consequence of the risk is that bias will focus on certain issues within Nelson and will affect the resulting wider transport benefits.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan, Communications Strategy.	Almost certain	Severe	Stakeholders	Critical	N	Use election communication protocol. All councillors invited to all PRG workshops. Rules in ToR around media. Clearly defined roles for politicians in workshop.	GD(AECOM)/RP(NZTA)		Likely	Severe	Critical	Live-Treat

51	10/07/2019	Consent Risk - Threat - Risk that there will be difficulties in consent due to the history associated with the project.	Cause of the threat is the history of the route being declined in the 2004 Environment Court Decision	Consequence of the threat is that it is more difficult to obtain consents for the project as the WCW, resilient access and vibrant CBD objectives are not achieved or delayed.	AECOM/NZTA	GD/RP	Legal team	Possible	Severe	Legal/Compliance	High	N	Use of legal advice and opinion.	GD(AECOM)/RP(NZTA)		Possible	Severe	High	
52	10/07/2019	Divided community - Threat - Risk that there will be different groups with dividing views.	The cause of this threat is that the community will be divided in their values and opinions and will not come to a consensus	Consequence of the threat is a delay to completion of the DBC and implementation of the projects recommended to achieve the outcomes sought.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan. Communications Strategy.	Almost certain	Severe	Stakeholders	Critical	N	Maintain register and summarising the views into the business case. Maintaining strong communication avoiding any periods of silence.	GD(AECOM)/RP(NZTA)		Likely	Severe	Critical	
53	10/07/2019	Availability of personnel - Threat - Risk that there will be changing personnel within stakeholder groups over time making it difficult for stakeholders to contribute.	The cause of this threat is that there will be changing personnel within the stakeholder groups over time, we make it too hard for stakeholders to contribute as they will not be available.	Consequence is that stakeholders will not contribute sufficient information to assist the DBC investigation and the outcomes sought.	AECOM/NZTA	GD/RP		Possible	Moderate	Stakeholders	Medium	N	Set up clear TOR	GD(AECOM)/RP(NZTA)		Manage as it occurs.	Unlikely	Severe	Medium
54	10/07/2019	Decisionmakers reject solution - Threat - Risk that decision makers will not accept the preferred solution of the stakeholders.	The cause of this threat will be that the decision makers do not agree with the stakeholders preferred options.	Consequence is that the implantation of projects for the DBC are delayed or may not go through.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan. Communications Strategy.	Possible	Extreme	Delivery	Critical	N	Stakeholder and engagement plan to ensure communication is made. Good clear messaging at PRG meeting. Monitor community opinions.	GD(AECOM)/RP(NZTA)		Unlikely	Extreme	High	
55	10/07/2019	Solution detail is not sufficient to push forward, sufficient to allow debate - Threat - Threat that solution does not have enough supporting evidence and engagement to push forward to implementation.	Insufficient detailed information about the preferred option	Consequence is that the implementation of projects for the DBC are delayed or may not go through.	AECOM/NZTA	GD/RP	Robust business case process including IOA	Possible	Severe	Delivery	High	N	Be aware of why previous applications were turned down. Follow business case process. Collecting robust and reliable data. Forming robust alternatives & options. Clearly articulate what outcome will look like and benefits. Visual presentation of information.	GD(AECOM)/RP(NZTA)		Possible	Severe	High	
56	10/07/2019	Funding streams alignment from multiple funding partners (timing, sequencing, affordability)	The funding partners have different income streams and different affordability criteria in terms of amount and timing	Funding is not available at the right level and the right time to implement the projects put forward in the business case	AECOM/NZTA	GD/RP	Funding Application, NLTP, LTP	Likely	Severe	Cost	Critical	N	Early discussions with funding partners to keep them informed and understand their constraints	GD(AECOM)/RP(NZTA)		Possible	Severe	High	
57	10/07/2019	3rd Party decisionmakers (Heritage NZ, DoC, Iwi) (Veto power) & unpredictability	Agencies that have independent veto powers	Consequence is that the implementation of projects for the DBC are delayed or may not go through.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan. Communications Strategy.	Likely	Severe	Stakeholders	Critical	N	Engage 3rd party decisionmakers directly, identify potential risks/interests.	GD(AECOM)/RP(NZTA)		Possible	Severe	High	
58	10/07/2019	Agency procedural changes (Business case process, GIS, Structural, Assessment, etc) - Threat - Changes in the agency will affect how the DBC is going to be undertaken.	Changes to NZTA procedures, changes to the GPS, NZTA restructure	Funding is not available at the right level and the right time to implement the projects put forward in the business case	AECOM/NZTA	GD/RP	NZTA Investment Decision making framework	Possible	Severe	Legal/Compliance	High	N	Monitor and adapt if necessary.	GD(AECOM)/RP(NZTA)		Possible	Moderate	Medium	
59	10/07/2019	Perception that right people have been engaged - Threat - Perception that the stakeholders that are affected by NFAP are properly engaged in the business case process (Public, NCC, NZTA, experts).	The cause of this threat is that stakeholders may perceive that they were not engaged often enough or given the opportunity to contribute.	Consequence is that stakeholders will not support the outcomes of the detailed business case.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan. Communications Strategy.	Likely	Severe	Stakeholders	Critical	N	Monitor and adapt if necessary.	GD(AECOM)/RP(NZTA)		Possible	Severe	High	
60	10/07/2019	Affordability for NCC - Threat - NCC doesn't realise level of investment sought from them until late in project (Affordability) (Transparency all costs, such as revocation)	Causes of this are limits on NCC funding streams and affordability for NCC.	Consequence is that the implementation of projects for the DBC are delayed or may not go through.	AECOM/NZTA	GD/RP	LTP	Likely	Severe	Cost	Critical	N	Open communication and transparency with NCC about the cost of options	GD(AECOM)/RP(NZTA)		Possible	Severe	High	
61	10/07/2019	TDC expectations realising opportunities (Integration across boundaries, two political systems with their own priorities)	TDC have different objectives and funding streams	TDC do not support the final business case and actions needed to implement it in a coordinated fashion	AECOM/NZTA	GD/RP	Project Programme. Communications Strategy.	Likely	Severe	Stakeholders	Critical	N	Engage with TDC at appropriate milestones.	GD(AECOM)/RP(NZTA)		The NOH FLoS are aligned. Continue to engage.	Possible	Severe	High
62	10/07/2019	Inadequate land use planning integration in project - Threat - Risk that poor land use does not integrate other aspects such as housing, leisure, shopping and other activities.	Causes of this are poor communication and integration of land use with transport	Consequence is that outcomes obtained from detailed business case will not address all issues related to NFAP. Transport affects a wider variety of activities in urban development.	AECOM/NZTA	GD/RP	TRACKS Growth Forecasts, Transport Modelling	Likely	Moderate	Stakeholders	High	N	Agreement by the key stakeholders on the land use and demand forecasts to be used in modelling	GD(AECOM)/RP(NZTA)		Growth forecasts for the modelling is now agreed by NZTA and NCC. The forecasts exclude the FDS, which will be done in a sensitivity test.	Possible	Severe	High
63	10/07/2019	Other agencies - Influence/isolated from project considerations (missed opportunities, risk they come in "over the top" of the recommendation later. Missing agency engagement from project. Opportunity - Risk that other agencies that have been isolated from project considerations (missed opportunity for involvement) come in "over the top" of the recommendation later.	Causes of this are poor involvement and opportunity to contribute for the other agencies.	Consequence is that the recommendation falls through and there are delays the implementation of the outcomes sought from the detailed business case.	AECOM/NZTA	GD/RP	Stakeholder and Public Engagement Plan. Communications Strategy.	Likely	Severe	Stakeholders	Critical	N	Develop engagement approach in engagement plan	GD(AECOM)/RP(NZTA)		Identify the other agencies. Letters written to KiwiRail and MOE.	Possible	Severe	High
64	10/07/2019	Solutions are not future proofed - Opportunity - Risk that the outcomes from NFAP are not future proofed to be used for future projects as technology changes occur and changing behaviours of people.	Project evidence and modelling may not provide an accurate future as technology and behaviours change.	Outcomes from NFAP will not be useful for future projects and will not assist in resolving issues that arise.	AECOM/NZTA	GD/RP	Robust business case process including IOA	Likely	Severe	Delivery	Critical	N	Robust modelling. Sensitivity testing	GD(AECOM)/RP(NZTA)		Possible	Severe	High	
65	10/07/2019	Business case doesn't articulate full benefits - Opportunity - Risk that the business case does not articulate the benefits associated with the project as it too transport focused.	Business case presented focuses too much on transport and not the bigger picture. E.g. economic, social, spatial development.	Business case is not received well as public and stakeholders are ill informed about other key benefits. Delays on implementation of outcomes sought.	AECOM/NZTA	GD/RP	Robust business case process including IOA	Likely	Severe	Delivery	Critical	N	Business case articulates wider benefits	GD(AECOM)/RP(NZTA)		Use the current IAF.	Possible	Severe	High
66	10/07/2019	Evidence doesn't support case for change - Threat - Evidence gathered during business case process is not sufficient to support a change in the network. (e.g. safety)	Evidence is not robust and consistent enough to prove the business case is worth pushing forward.	Changes sought from business case will not be pushed any further and no projects will be produced following the business case.	AECOM/NZTA	GD/RP	Robust business case process including IOA	Likely	Severe	Delivery	Critical	N	Robust evidence base	GD(AECOM)/RP(NZTA)		Evidence does support case for change. Scale of interventions to be determined.	Possible	Severe	High
67	10/07/2019	Solution creates another problem - Threat - New problems are created due to the preferred solution (Population increase, tourism exceeding expectations)	The preferred solution from business case creates further unseen problems in future.	Further issues arise due to the solution being implemented.	AECOM/NZTA	GD/RP	Robust business case process including IOA	Possible	Moderate	Public/Media	Medium	N	Robust modelling and business case process	GD(AECOM)/RP(NZTA)		Unlikely	Moderate	Medium	
68	10/07/2019	Business case partners don't agree on final solution - Threat - Can not come to a consensus as to the preferred solution for the business case.	Differing agendas and differing project objectives	Lack of agreement on final business case and outcomes sought	AECOM/NZTA	GD/RP	Robust business case process including IOA	Possible	Extreme	Delivery	Critical	N	Robust business case process.	GD(AECOM)/RP(NZTA)		Robust and regular comms between partners.	Unlikely	Extreme	High
69	10/07/2019	Business case does not robustly articulate movement & place outcomes - Threat - Business case does not robustly articulate the effects on movement/place-based approach (traffic focused and not focused on entire community movement)	Business case process is focused on transport and not the wider effects on community movement.	Consequence is that outcomes obtained from detailed business case will not address all issues related to NFAP. Transport affects a wider variety of activities in urban development.	AECOM/NZTA	GD/RP	Robust business case process including IOA	Likely	Severe	Delivery	Critical	N	Agreement by the key stakeholders on the land use and demand forecasts to be used in modelling	GD(AECOM)/RP(NZTA)		Possible	Severe	High	
70	10/07/2019	Overestimate capacity of visitor destinations - Threat - Estimations made for the traffic model and strategic case are not accurate.	Evidence gathered and modelling overestimate the capacity of visitor destinations and modelling looks at averages rather than tourist peak.	Outcome from business case will not have the capacity as stated and will still have major congestion at peak periods.	AECOM/NZTA	GD/RP	TRACKS Growth Forecasts, Transport Modelling	Likely	Moderate	Delivery	High	N	Sensitivity testing of modelling at peak periods	GD, NH(AECOM)/RP(NZTA)		See also Risk 3	Possible	Moderate	Medium
71	2/08/2019	Growth assumptions in the traffic model - Threat - Growth assumptions in the traffic model might be different to that stated in the incoming 2018 Census.	TRACKS model will be changed due to new 2018 Census.	Have to redo the model to use the growth assumptions from 2018 TRACKS period	AECOM/NZTA	GD/RP	TRACKS Growth Forecasts, Transport Modelling	Likely	Moderate	Delivery	High	N	Reviewing model on a regular basis to minimise abrupt changes closer to delivery date	GD, NH(AECOM)/RP(NZTA)		See also Risk 3. See also risk 62.	Possible	Moderate	Medium
72	2/08/2019	Intended timeframes for future development - Opportunity - Nelson is currently not ready for future development (May need to do a capacity assessment of the other utilities)	Future development strategy for Nelson does not seem to show that Nelson is ready for development (power, telecoms, 3 waters). Tasman looks to be ready for the future development strategy	The ability to deliver the intensification in the Nelson region. Require digging up a lot of current infrastructure to support the new 3 waters development (Opportunity build transport infrastructure along 3waters, power and telecoms)?	AECOM/NZTA	GD/RP	Robust business case process including IOA	Likely	Moderate	Delivery	High	N	Consider this risk as part of interventions in the business case process.	GD(AECOM)/RP(NZTA)		Possible	Moderate	Medium	





## Safety in Design Risk Register

**Project:** Nelson Future Access - Rocks Road  
**Author (Role):** SG/GD/AA  
**Approved By:** \_\_\_\_\_  
**Revision:** B

**Job No:** 60603231  
**Date:** 12/07/2021  
**Stage of Design/Project:** Concept Design

Risks Associated With Design							Residual Risk							Actions				
Discipline	Risk Ref	Chainage	Hazard	Risk Description	Existing Controls	L	C	R	Proposed Controls	L	C	R	Risk Owner	Client Approved	Design Status	Date	Action Owner	Action required
Design	SID 1	7760 - 10360	Service Access Covers	Access covers pose risk to cyclists, pedestrians and vehicles	None	4	4	4	Consider best location for access covers and where practical locate to minimise risks to cyclists and other users Consider selection of access covers with regard to surface finish and ensure installed flush with surrounding surface	2	4	8	WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Stormwater design	SID 2	7760 - 10220	Contamination in stormwater runoff	Contamination in stormwater runoff from additional impervious areas poses health risk to users of receiving waters	None	3	2	6	Consider possibility of some form of stormwater treatment	1	2	2	WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Design	SID 3	7860 - 10300	Relocated chain fence	Relocated historic chain fence will not meet safety standards - may not provide adequate level of protection against falls	None	5	5	25	Consider ways in which level of protection provided by chain fence could be supplemented by other measures Consider alternatives to chain fence that will meet HPT requirements	2	5	10	WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Traffic Management	SID 4	7760 - 10360	Construction equipment	Construction equipment poses risks to cycleway, footpath and road users during construction	None	5	5	25	Consider what length of construction zone will allow for safe working Approved TMP Consider use of lane closures and night work due to traffic issues in the day Ensure during design there will be adequate width to allow for minimum safe working zone for live traffic during construction	2	5	10	WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Site management	SID 5	7760 - 10360	Construction activities	Construction activities pose risks to cycleway, footpath and road users during construction	None	5	4	20	Fencing of active work areas Adequate signage Diversion clear of active work areas where practical Ensure during design there will be adequate width to allow for minimum safe working zone for construction activities	2	4	8	WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Site management	SID 6	7760 - 10360	Maintenance equipment	Maintenance equipment poses risks to cycleway, footpath and road users during future maintenance activities	None	5	5	25	Approved TMP Consider use of lane closures and night work due to traffic issues in the day Ensure during design there will be adequate width to allow for minimum safe working zone for live traffic during future maintenance	2	5	10	WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases

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Risks Associated With Design									Residual Risk							Actions		
Discipline	Risk Ref	Chainage	Hazard	Risk Description	Existing Controls	L	C	R	Proposed Controls	L	C	R	Risk Owner	Client Approved	Design Status	Date	Action Owner	Action required
Site management	SID 7	7760 - 10360	Maintenance activities	Maintenance activities pose risks to cycleway, footpath and road users during future maintenance activities	None	5	4		Fencing of active work areas Adequate signage Diversion clear of active work areas where practical Ensure during design there will be adequate width to allow for minimum safe working areas maintenance work during future maintenance	2	4		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Site management	SID 8	7880 - 9840	Tidal surges and possible storm conditions	Tidal surges and possible storm conditions pose danger in construction zone beyond the existing wall	None	3	4		Cease construction activities when tidal surges or storm conditions pose unacceptable risk	1	2		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Design	SID 9	9710	Insufficient access through seawall to waterfront (Doesn't meet requirements for reducing severance)	People bypass constructed access points and climb over seawall to access waterfront	Appropriate spacing of access points considered during preliminary design to balance protection provided by seawall with ability to readily access the waterfront	3	4		Review number and location of access points and confirm or amend	2	4		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 10	7880 - 9840	Insufficient access through seawall to waterfront (Doesn't meet requirements for reducing severance)	Inadequate view shafts for visitors to waterfront		3	4		Review number and location of view shafts and confirm or amend	2	4		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Design	SID 11	7760 - 10360	Potential lip that may form between bitumen cycleway and concrete footpath	Potential lip that may form between bitumen cycleway and concrete footpath may be a hazard to cyclists	None	3	4		Detailed design of pavements to minimise likelihood of differential settlement between concrete and asphalt surfaces (perhaps lip cast into edge of concrete to locate asphalt edge)	1	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Design	SID 12	7760 - 10360	Inadequate permanent lighting	Inadequate lighting would increase likelihood of accidents involving vehicles, cyclists and pedestrians	Assess adequacy of existing lighting on hillside	3	4		Carry out lighting adequacy assessment relative to lighting design standards for roadway, cycleway and pedestrian paths	2	4		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Contract management	SID 13	7760 - 9920	Confusion with shipping navigation lights	Ships confuse construction lights or other lighting on Rocks Road with marine navigation lights	None	2	4		Ensure red or green lights used in construction or ongoing operations are not visible from shipping channels	1	4		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Design	SID 14	7760 - 10360	Crime	Criminal activity	None	3	3		Carry out CPTED assessment in accordance with MoJ National Guidelines for Crime Prevention through Environmental Design in New Zealand Provide adequate lighting Consider installation of CCTV	2	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases

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Risks Associated With Design									Residual Risk							Actions		
Discipline	Risk Ref	Chainage	Hazard	Risk Description	Existing Controls	L	C	R	Proposed Controls	L	C	R	Risk Owner	Client Approved	Design Status	Date	Action Owner	Action required
Contract management	SID 15	7760 - 10360	Coal Tar	Coal tar (a hazardous substance when disturbed) may be present below the existing road surface (in old layers of seal).	None	3	3		Be aware of possible presence of coal tar Carry out investigations/testing during design phase Manage coal tar in accordance with H&S and Environmental guidelines if encountered	3	1		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Design	SID 16	7760 - 10360	Obstructions to vulnerable users	Vulnerable users (wheelchairs, mobility scooters, blind etc) experience difficulty in safely using walkways and cycleways	None	3	4		Ensure adequate width is provided for wheelchairs and mobility scooters Minimise possible trip hazards Provide guidance for blind in accordance with standards	2	4		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Contract management	SID 17	9800 - 10360	Buried rail lines	Buried historic rail lines may be encountered in the course of construction (particularly at northern end)	None	3	2		Assess whether this is a Historic Places Trust (HPT) issue and if so have an archeological authority in place for the construction phase Identify this risk in construction contract documents	3	1		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
Contract management	SID 18	7760 - 8340 9260 - 9960	Use of barges for rock placement	Barges pose risk to other users of waterfront	None	2	3		Ensure use of barges is covered by an approved Safe Work Method Statement (SWMS)	1	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 19	7760 - 10360	Unknown services	Unknown services encountered in course of construction	None	4	5		Use buried service locators Consider use of ground penetrating radar Consider use of hydrovac excavation	2	5		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 20	7760 - 10360	Electric bikes	More people use electric bikes creating additional unexpected demand requiring wider footpath / cycleways than designed	None	3	4		Consider speed restrictions on cycleway Review projections of future demand	3	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 21	7760 - 10360	Design Standards for cycleway	Austroroad design standards have been assumed and may not meet the expectations for cyclists for safe travel	None	2	3		Review projections of future demand and design accordingly	2	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 22	8340 - 9270	Wave surge onto footpath, cycleway/road	The shape of the seawall does not minimize wave action / surges onto road	None	3	2		Ensure seawall profile designed to reflect waves/surges	1	2		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases

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Risks Associated With Design									Residual Risk							Actions		
Discipline	Risk Ref	Chainage	Hazard	Risk Description	Existing Controls	L	C	R	Proposed Controls	L	C	R	Risk Owner	Client Approved	Design Status	Date	Action Owner	Action required
	SID 23	8460 - 8920	Cliffs above road	Without additional work the cliffs above the road are an ongoing landslip risk, if we cut into slope we will increase this risk.	None	3	4		Minimise need to cut into cliffs in design Geotech investigation/design if any disturbance of cliffs is required Consider risk posed by cliffs in current state	2	4		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 24	7760 - 10360	Noise from construction	Noise impacts on properties adjacent to construction	None	3	2		Contract requirements to limit noise	2	2		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 25	7760 - 10360	Access restricted by construction	Public recreational access restricted during construction (and after work completed – seawall vs revetment) may lead to people taking risks	None	3	3		Provide adequate access to minimise incentives for risk taking	2	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 26	7760 - 10360	Access restricted by construction	Impact on access for on water users (boats, swimming) between Haulashore and Rocks Road may lead to users taking risks to achieve access	None	3	3		Provide adequate access to minimise incentives for risk taking	2	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 27	7760 - 10360	Access restricted by construction	Impact on access to yacht moorings from Wakefield Quay to Haulashore Island may lead to users taking risks to achieve access	None	2	3		Provide adequate access to minimise incentives for risk taking	2	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 28	8340 - 9270	Wave reflection from seawall	Seawall design leads to reflection of waves and confused seas to the inner harbour area	None	2	2		Take account of wave reflection in seawall design	1	2		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 29	7760 - 10360	Access to Port restricted	Delays to trucks getting to / from the Port during construction may lead to risk taking	None	3	3		Ensure alternative Port access is available	2	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 30	8340 - 9270	Restrictions of Outstanding Natural Landscape (ONL)	The wall is unable to extend 2 metres off existing in the ONL resulting in increased likelihood of accidents due to reduced width	None	2	3		Ensure risks associated with not achieving required widths are clearly understood and accepted by stakeholders	2	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases



### Safety in Design Risk Register

Risks Associated With Design									Residual Risk						Actions			
Discipline	Risk Ref	Chainage	Hazard	Risk Description	Existing Controls	L	C	R	Proposed Controls	L	C	R	Risk Owner	Client Approved	Design Status	Date	Action Owner	Action required
	SID 31	7760 - 10360	Width restrictions	7 metre design standard doesn't meet future need for emergency service provision leading to inability of emergency services to respond effectively to incidents	None	2	4		Design for greater than 7 metre standard If 7m not acceptable, ensure risks associated with not achieving required widths are clearly understood and accepted by stakeholders	1	4		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 32	7760 - 10360	Width restrictions	Not wide enough to meet future mixed use need leading to increased risks to users	None	2	3		Review projections of future demand and design accordingly	2	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 33	7800 - 10200	Sea level rise	Existing carriageway level is too low to meet future sea level rise risks	None	2	2		Ensure risks associated with sea level rise are assessed and clearly communicated	2	2		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases
	SID 34	7800 - 8420	Tahunanui slump buttress	Tahunanui slump buttress undermined leading to safety risks associated with collapse	None	2	3		Do not disturb (or undermine) slump buttress without geotech investigation and appropriate protective measures	1	3		WK		Concept	12/07/21	WK	Make SiD Register available to Designers and ensure that robust SiD practices in accordance with WK's SiD standard are applied in subsequent phases

Risk Ranking Matrix						Likelihood	Probability in 1 year period	L
	Insignificant	Minor	Moderate	Severe	Extreme			
Almost certain	Low	Medium	High	Critical	Critical	Almost Certain	>85%	5
Likely	Low	Medium	High	Critical	Critical	Likely	>55% - 85%	4
Possible	Low	Medium	High	Critical	Critical	Possible	>30% - 55%	3
Unlikely	Low	Medium	High	Critical	Critical	Unlikely	>5% - 30%	2
Rare	Low	Medium	High	Critical	Critical	Rare	<=5%	1

Consequence	C
<b>Extreme</b> - Potential for fatality or multiple injuries leading to permanent disability or permanent negative impact on public health	5
<b>Severe</b> - Potential for recoverable injuries requiring hospitalisation or resulting in non-permanent negative impact on public health	4
<b>Moderate</b> - Potential for recoverable injuries requiring professional medical treatment and resulting in employment absenteeism	3
<b>Minor</b> - Potential for recoverable injuries requiring professional medical treatment but with negligible lost time	2
<b>Insignificant</b> - Potential for recoverable injuries manageable with in-situ first aid care	1