Brooklyn Hill Cycling Improvements

90% Design Stage Safe System Audit

Prepared for:
Wellington City Council

Date 19th August 2025

Prepared by:
Stantec

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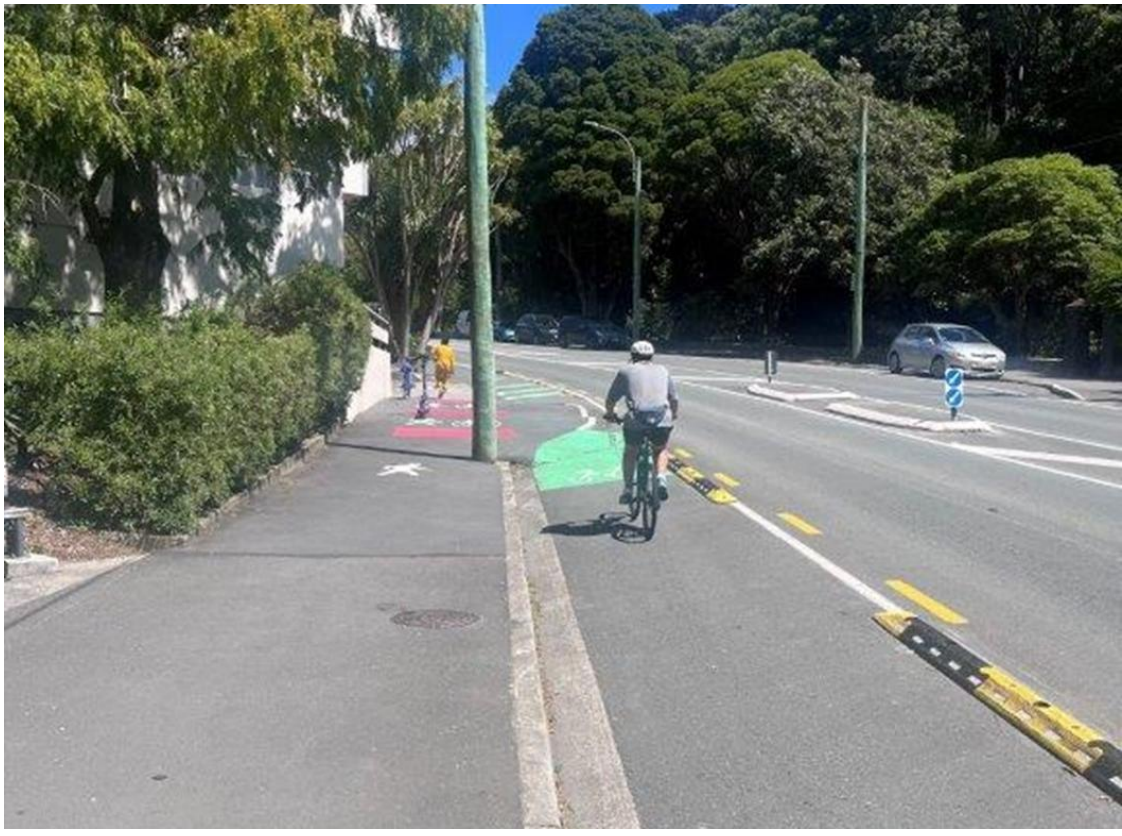

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Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
1	Draft	Natt Poolyaem	07/08/2025	Cobus de Kock	15/08/2025	Jon England	18/08/2025
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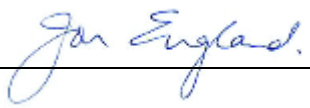
Approved by 

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Acronyms / Abbreviations

RSA	Road Safety Audit
SSAT	Safe System Audit Team
SSA	Safe System Audit
WCC	Wellington City Council

1 Introduction

1.1 Road Safety Audit Definition and Purpose

A road safety audit is a term used internationally to describe an independent review of a future road project to identify any safety concerns that may affect the safety performance. The audit team considers the safety of all road users and qualitatively reports on road safety issues or opportunities for safety improvement.

A road safety audit is therefore a formal examination of a road project, or any type of project which affects road users (including cyclists, pedestrians, mobility impaired etc.), carried out by an independent competent team who identify and document road safety concerns.

A road safety audit is intended to help deliver a safe road system and is not a review of compliance with standards.

The primary objective of a road safety audit is to deliver a project that achieves an outcome consistent with Road to Zero and the Safe System approach, which is a safe road system free of death and serious injury. The road safety audit is a safety review used to identify all areas of a project that are inconsistent with a Safe System and bring those concerns to the attention of the client so that the client can make a value judgement as to appropriate action(s) based on the risk guidance provided by the safety audit team.

The key objective of a road safety audit is summarised as:

> *'to deliver completed projects that contribute towards a safe road system that is free of death and serious injury by identifying and ranking potential safety concerns for all road users and others affected by a road project.'*

A road safety audit should desirably be undertaken at project milestones such as:

- concept stage (part of business case),
- scheme or preliminary design stage (part of pre-implementation),
- detail design stage (pre-implementation or implementation), or
- pre-opening or post-construction stage (implementation or post-implementation).

A road safety audit is not intended to be a technical or financial audit and does not substitute for a design check of standards or guidelines. Any recommended treatment of an identified safety concern is intended to be indicative only, and to focus the designer on the type of improvements that might be appropriate. It is not intended to be prescriptive and other ways of improving the road safety or operational problems identified should also be considered.

In accordance with the procedures set down in the NZTA Road Safety Audit Procedures for Projects Guidelines - Interim release May 2013 the audit report should be submitted to the client who will instruct the designer to respond. The designer should consider the report and comment to the client on each of any concerns identified, including their cost implications where appropriate, and make a recommendation to either accept or reject the audit report recommendation.

For each audit team recommendation that is accepted, the client will make the final decision and brief the designer to make the necessary changes and/or additions. As a result of this instruction the designer shall action the approved amendments. The client may involve a safety engineer to provide commentary to aid with the decision.

Decision tracking is an important part of the road safety audit process. A decision tracking table is embedded into the report format at the end of each set of recommendations. It is to be completed by the designer, safety engineer, and client for each issue, and should record the designer's response, client's decision (and asset manager's comments in the case where the client and asset manager are not one and the same) and action taken. Decision tracking of safety concerns ranked as a comment is optional.

A copy of the report including the designer's response to the client and the client's decision on each recommendation shall be given to the road safety audit team leader as part of the important feedback loop. The road safety audit team leader will disseminate this to team members.

1.2 The Project

Stantec were commissioned by Wellington City Council (WCC) to undertake the Safe System Audit (SSA) for the cycling improvements proposed as part of the Brooklyn Connections Cycleway project.

The project includes a more permanent uphill cycle lane on Brooklyn Road from lower Nairn Street, replacing the transitional trial cycle lane to Cleveland Street and new on street parking arrangements on Helen Street. This will be complemented with improvements for pedestrians, changes to improve bus journey times, a new shelter at one stop, and other safety improvements.

The SSA site and surrounding area are shown in **Figure 1**.

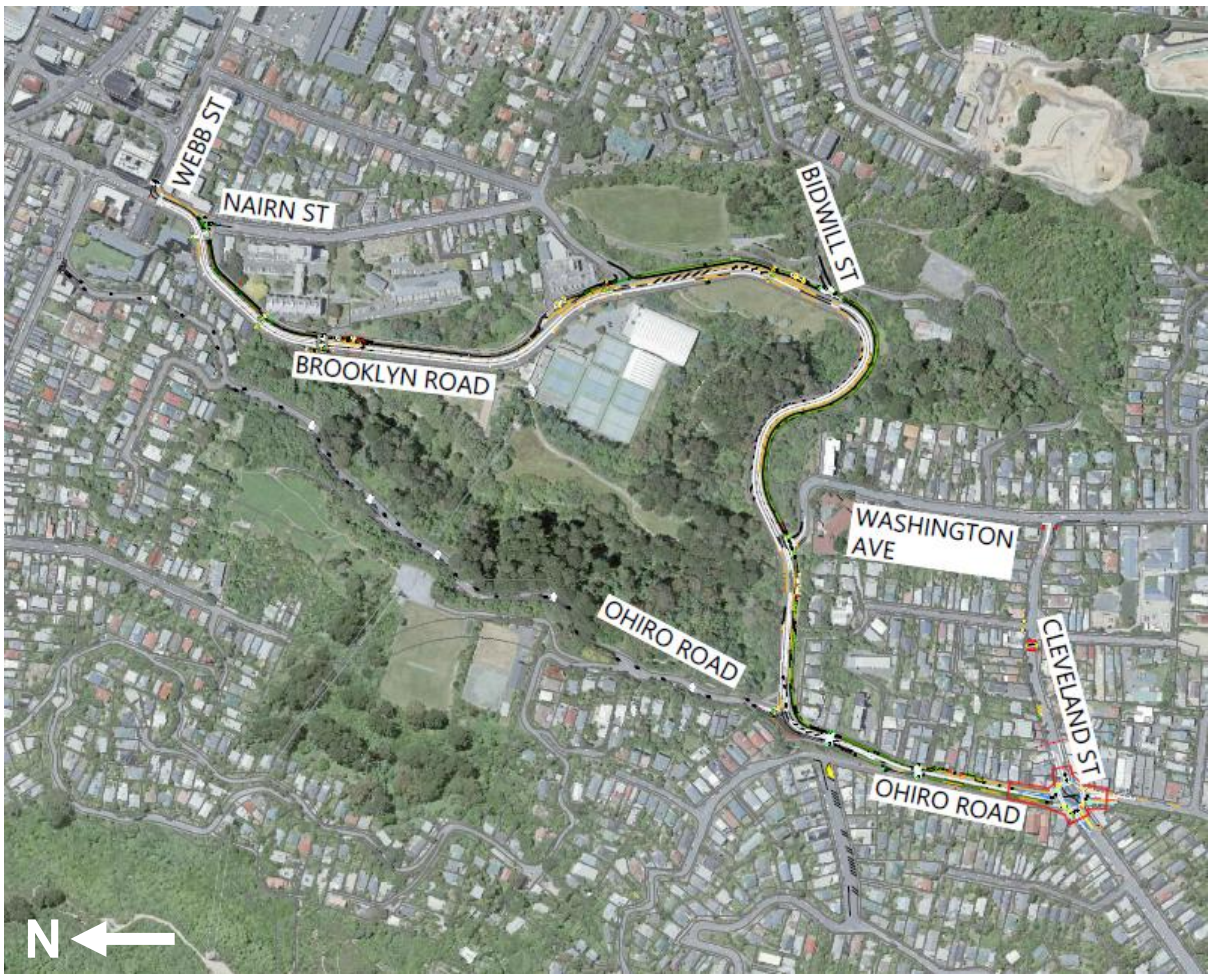

Figure 1: Site location

1.3 The Road Safety Audit Team

This safe system audit has been carried out in accordance with the Waka Kotahi NZ Transport Agency Safe System Audit Guidelines for Transport Projects − Published in October 2022, by the following safe system audit team (SSAT):

- Cobus de Kock – Senior Principal Transportation Engineer & Traffic Engineering and Road Safety Lead (SSA Team Member)
- Jon England – Senior Principal Road Safety Engineer (SSA Team Leader)
- Natt Poolyaem – Graduate Civil Engineer (SSA Observer)

1.4 Briefing, Audit, and Exit Meetings

No Briefing or exit meetings with the designer and Wellington City Council was held.

1.5 Previous Road Safety Audits

The following road safety audits are relevant to this project.

- Brooklyn Hill Cycling Improvements 50% Detailed Design Stage Road Safety Audits
- Brooklyn Hill Cycling Improvements 90% Detailed Design Stage Road Safety Audits

1.6 Scope of this Road Safety Audit

This is a 90% detailed design stage Safe System audit, which has been undertaken by the team named in Section 1.3.

This audit consisted of a daytime site visit that occurred on Monday, 4th August 2025. This audit includes safety reviews of the documents provided by the Client, and an assessment of the site. A night time site visit was not undertaken for this audit as the SSAT were familiar with the site during the hours of darkness during the previous safe system audit. Weather conditions were overcast.

1.7 Report Format

1.7.1 Safety concern ranking

The safe system auditors have ranked the identified safety concerns together with four categories of suggested actions as shown in **Error! Reference source not found.**.

Table 1. Safety concern ranking

Ranking	Suggested action
Serious	A serious safety concern that must be addressed and requires changes to avoid serious safety consequences.
Significant	A significant safety concern that should be addressed and requires changes to avoid serious safety consequences.
Moderate	A moderate safety concern that should be addressed to improve safety.
Minor	A minor safety concern that could be addressed where practical to improve safety.

The ranking of safety concerns is based on the probability of a crash combined with the most likely severity outcome of that crash, as indicated in *Table 2*.

Table 2. Safety concern risk matrix

		Severity Outcome				
		Non-injury	**Minor**		**Serious**	**Fatal**
		Property damage only (PDO).	Injury that is not serious but requires first aid, or that causes discomfort or pain to the person injured.	**Safe System Injury Threshold**	Injury (fracture, concussion, severe cuts, or other injury) requiring medical treatment or removal to and retention in hospital.	Death occurring as the result of injuries sustained in a crash within 30 days of the crash.
Probability of a crash	**Very likely**	**Minor**	**Moderate**		**Serious**	**Serious**
	Likely	**Minor**	**Moderate**		**Serious**	**Serious**
	Unlikely	**Minor**	**Minor**		**Significant**	**Serious**
	Very unlikely	**Minor**	**Minor**		**Significant**	**Significant**

Qualitative risk ranking requires professional judgement and a wide range of experience in projects of all sizes and locations. Factors that have been considered when qualitatively assessing the probability of a crash and the most likely severity outcome of that crash are described below.

Probability of a crash

The safe system auditors have drawn on historic crash rates or other research for similar elements of projects, or projects as a whole where appropriate, to assist in understanding the likely crash types, frequency, and likely severity that may result from a particular safety issue.

The probability of a crash in *Table 2* has been qualitatively assessed on the basis of expected exposure (how many road users will be exposed to a safety issue) and the risk of a crash resulting from the presence of the issue.

It is sometimes helpful to use crash frequency as a surrogate indicator of crash probability as shown in Table 3.

Table 3. Crash frequency as an indicator of probability

Crash Frequency	Crash Probability
Multiple crashes (more than one per year)	Very likely
1 every 1 to 5 years	Likely
1 every 5 to 10 years	Unlikely
Less than 1 every 10 years	Very unlikely

Severity outcome

A crash of a particular type can result in a range of severity outcomes for the people involved. For the purposes of this assessment, the crash severity outcome in *Table 2* has been qualitatively assessed as being the most likely or predominant severity outcome on the basis of factors such as speed, type of crash, type of vehicles, and the people likely to be involved.

The severity of an injury is determined in part by the ability of a person to tolerate the crash forces. A person wearing safety restraints in a modern motor vehicle will have a greater tolerance to the forces involved than a pedestrian or cyclist struck by a motor vehicle. The safe system auditors have also considered the likely user composition, and hence the likely severity of injury to the people involved in the crash. An able-bodied adult may have a greater ability to recover from higher trauma injuries than a child, whereas an elderly person may have poor ability to recover from high trauma injuries.

1.7.2 Comments

In addition to the ranked safety issues, it may be appropriate for the Safe System audit team to provide additional comments with respect to items that may have a safety implication but lie outside the scope of the Safe System audit. A comment may include items where the safety implications are not yet clear due to insufficient detail for the stage of project, and items outside the scope of the audit such as existing issues not impacted by the project or an opportunity for improved safety but not necessarily linked to the project itself. While typically comments do not require a specific recommendation, the auditors may give suggestions in some instances.

Decision tracking of safety concerns ranked as a comment is optional.

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1.8 Documents Provided

The following documents were provided to the SSAT for the audit.

- Brooklyn Hill Cycling Improvements Detailed Design – BIL-1003220 REV B
- BIL-1003220_Design Memo V2-25072025.pdf

2 Safety Concerns

2.1 Brooklyn Road

2.1.1 Cycle Way Marking

Significant

On drawing sheet C301, at the T-intersection between Nairn Street and Brooklyn Street, there is a green-painted cyclist symbol marking the start of the cycle lane. However, further along the same lane, another cyclist symbol appears at a driveway without the green background (shown in **Figure 2**Error! Reference source not found.). This inconsistency can confuse both drivers and cyclists, r educing the visibility, presence and continuity of the cycle lane.

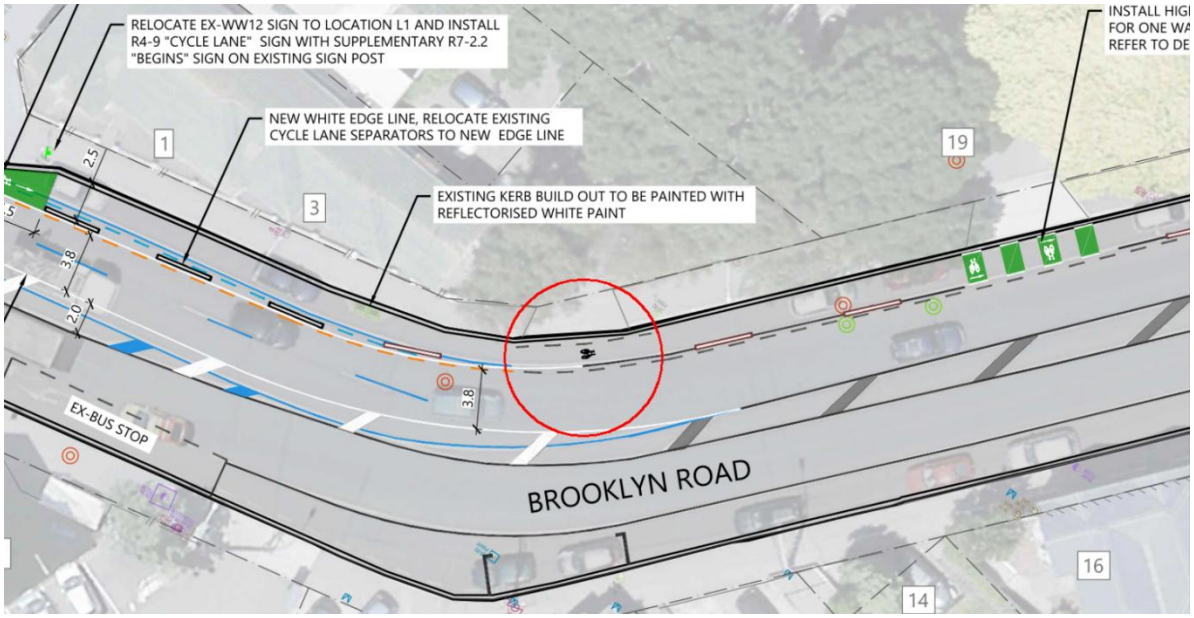


Figure 2: Drawing Sheet C301 - Cycle Way Marking

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on a cyclist missing the visual guidance into the separated cycle lane due to inconsistent symbol markings, resulting in potential exposure to vehicle conflict in the adjacent traffic lane.

Probability of a crash	Crashes resulting from this safety concern are unlikely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be serious.
Risk ranking	The safety concern is therefore deemed to be significant.

Recommendation(s)

1. Apply green surfacing behind the cyclist marking to maintain visual continuity and reinforce driver awareness of the cycle lane.

Decision Tracking

Design team response	Agreed. As the cycle lane continues outside the driveway at this location, green paint behind the cycle symbol can be added.
Client safety engineer comment	Agree with Designer response.
Client decision	Designer to update the drawing to reflect the addition of green paint behind the cycle symbol
Action taken	Drawings updated

2.1.2 Pedestrian Facilities at Brooklyn Road & Washington Avenue Intersection Significant

On drawing sheet 307, a footpath is shown southeast of the intersection between Brooklyn Road and Washington Avenue (as shown in **Figure 3**). This footpath should be removed to discourage pedestrians from crossing toward this section, which is not intended as a designated crossing point. Similarly, the dropped kerb located northwest of the intersection, associated with the existing median island, should also be removed to prevent informal pedestrian crossings at that location.

Drivers will be preparing for the pedestrian crossing with the median build-out and may not expect pedestrians to cross immediately. If pedestrians cross prematurely at undesignated points, it may result in slower driver reactions and increase the risk of conflict.

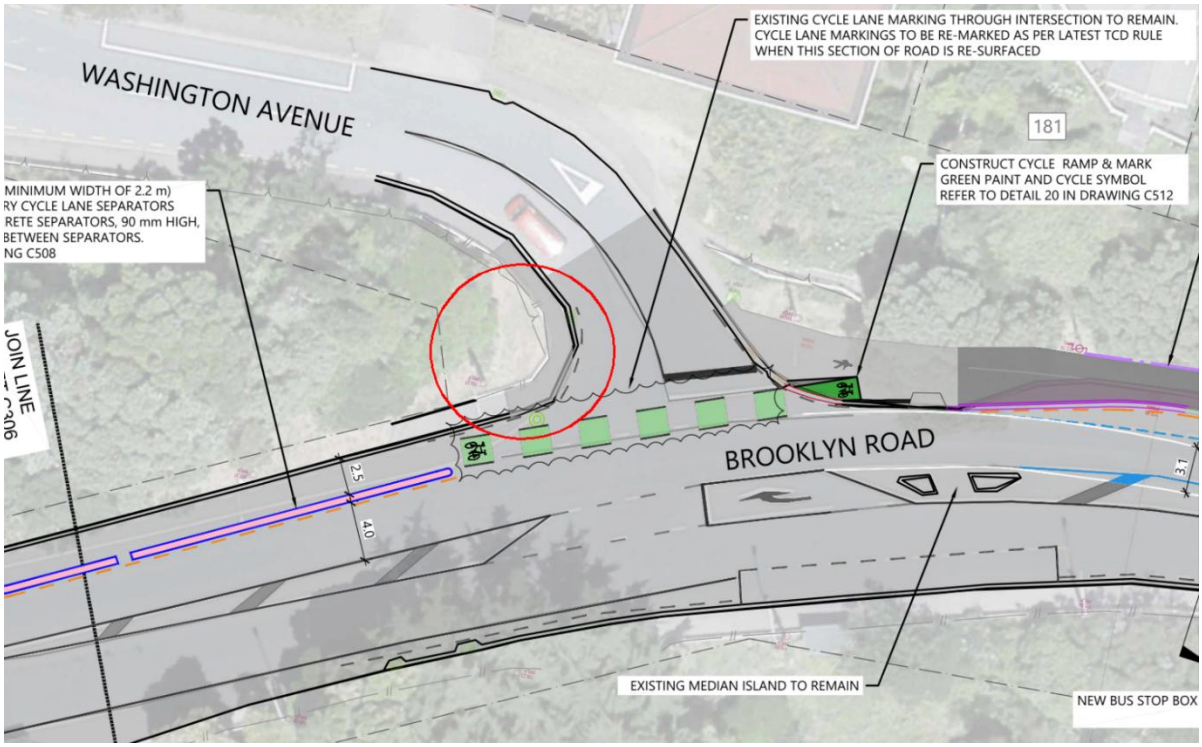


Figure 3: Drawing Sheet C307 - Pedestrian Facilities at Brooklyn Road & Washington Avenue Intersection

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on pedestrians crossing at undesignated locations due to misleading infrastructure, increasing the likelihood of unexpected vehicle-pedestrian conflict.

Probability of a crash	Crashes resulting from this safety concern are unlikely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be serious.
Risk ranking	The safety concern is therefore deemed to be significant.

Recommendation(s)

1. Remove dropped kerb to encourage pedestrians to cross at the designated point.
2. Remove the footpath at this location to discourage unsafe crossings and guide pedestrians to safer, designated crossing points on Washington Avenue

Decision Tracking

Design team response	1. Partially agree. The dropped kerb at the access to central park can be replaced with a standard kerb & channel. However, consideration is to be given if this access is used by cyclists (green paint can be added to the dropped kerb and length of the dropped kerb can be reduced to discourage pedestrian use of this drop kerb and keep it for cyclists use) Further investigation is required to confirm if this access is used by cyclists.  2. Partially agree. The footpath along the eastbound lane of Washington Avenue currently leads to a dead end at Brooklyn Road. While a portion of this footpath could be removed near Brooklyn Road, removing the entire section along the eastern kerb would create safety risks. In that scenario, pedestrians would be forced to cross Washington Avenue further upstream, where drivers are not expecting pedestrians to enter the roadway. This could reduce driver reaction time and increase the likelihood of crashes. It is relatively safer for pedestrians to cross at the intersection, where drivers are already on higher alert due to the continuous cycle lane and intersection activity. As an alternative, consideration could be given to a dedicated pedestrian crossing adjacent to the cycle lane crossing at the intersection. However, introducing such a crossing is outside the current scope of this project.
Client safety engineer comment	Agree with Designer's response. Consider a dedicated pedestrian crossing adjacent to the cycle lane crossing at the intersection
Client decision	Drop kerb to remain for access to Central Park by PSR maintenance vehicles and for cyclists. T&I minor works programme to consider a dedicated pedestrian crossing adjacent to the cycle lane crossing at the intersection. Follow up on minor works programme to occur.
Action taken	No action within this project. T&I Minor Works programme to consider a dedicated pedestrian crossing adjacent to the cycle lane crossing at the intersection.

2.1.3 Missing Cycle Signage **Significant**

On drawing sheet C305, on Brooklyn Road just before the intersection with Bidwill Street, green surfacing is shown to indicate the presence of a cycle way. However, the absence of a cycle symbol on the green surfacing (as shown in **Figure 4**) may create ambiguity for both cyclist and bus drivers, particularly as it is located just before the bus stop, where buses begin to merge left to reach the designated stopping area.

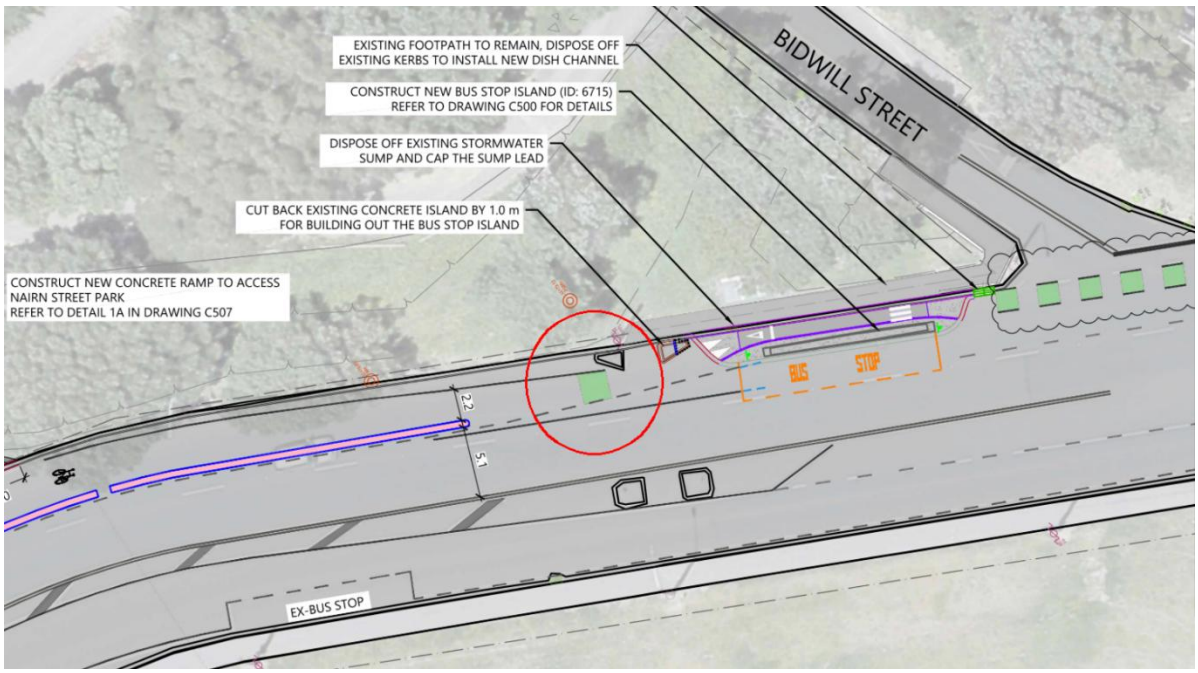


Figure 4: Drawing Sheet C305 - Missing Cycle Signage

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on cyclists and bus drivers misinterpreting the cycle lane due to the absence of a cycle symbol on the green surfacing, increasing the risk of conflict near the bus stop merge area.

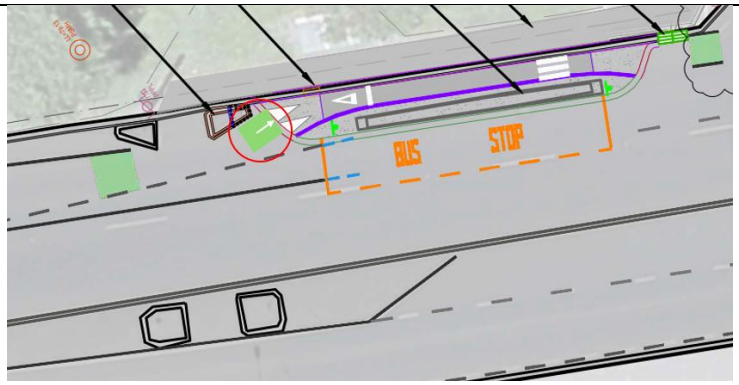
Probability of a crash	Crashes resulting from this safety concern are unlikely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be serious.
Risk ranking	The safety concern is therefore deemed to be significant.

Recommendation(s)

1. Add a cycle symbol to the green-painted area to clearly indicate the presence of a cycle way and improve wayfinding for cyclists.

Decision Tracking

Design team response	Agreed, A cycle symbol can be added over the existing green paint, and an additional green treatment with a directional arrow can be applied just before the cycle ramp on the bus stop island (see snip below). This will help reinforce the intended travel direction for cyclists and improve overall legibility of the facility.

	
Client safety engineer comment	Agree with Designer response.
Client decision	Designer to update the drawings with a cycle symbol over the existing green paint, and additional green treatment with a directional arrow just before the cycle ramp on the bus stop island (see snip above).
Action taken	Drawings updated

2.1.4 Red Surfacing by the Bus Stop for the Shared Path **Serious**

On drawing sheet C305 and 500, a shared path for pedestrians and cyclists is shown adjacent to the bus stop. However, the absence of red surfacing to highlight potential interactions (as shown in **Figure 5** and **Figure 6**) may reduce awareness among users. Without this visual cue, cyclists may not anticipate pedestrians entering or exiting the bus, and pedestrians may not expect cyclists passing through the shared path.

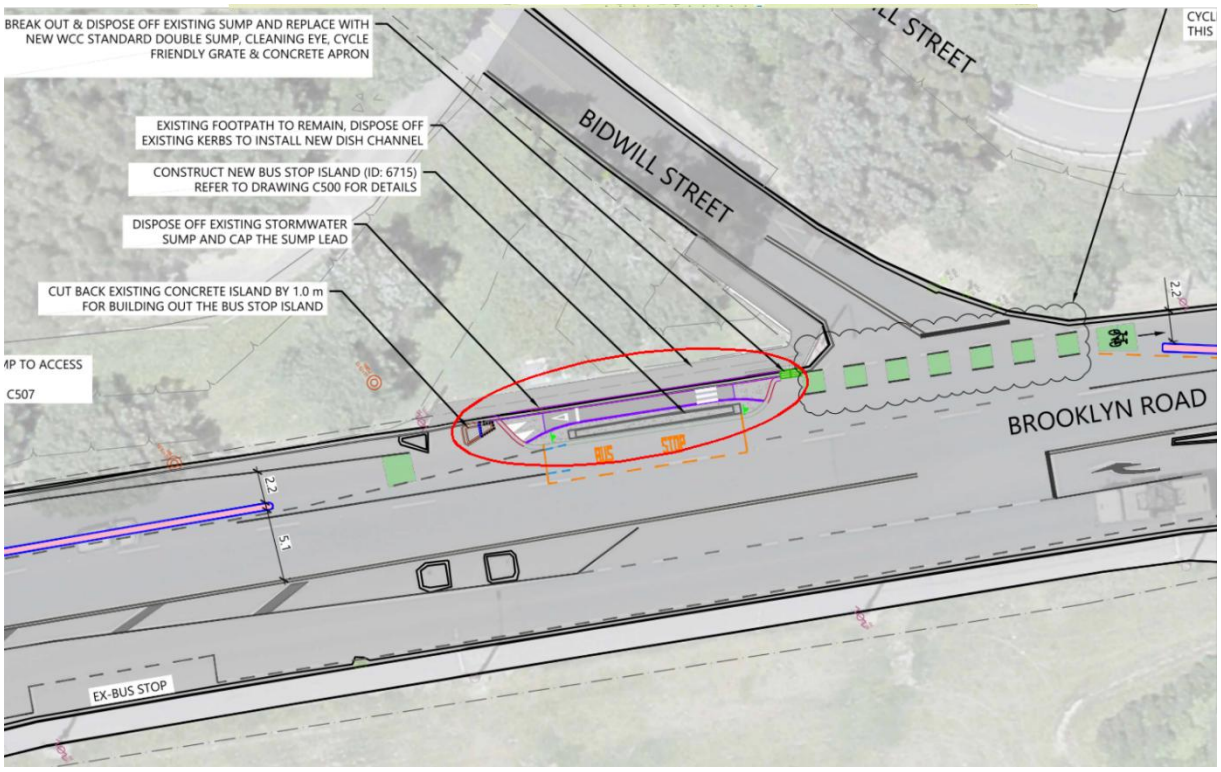


Figure 5: Drawing Sheet C305 – Shared Path by The Bus Stop

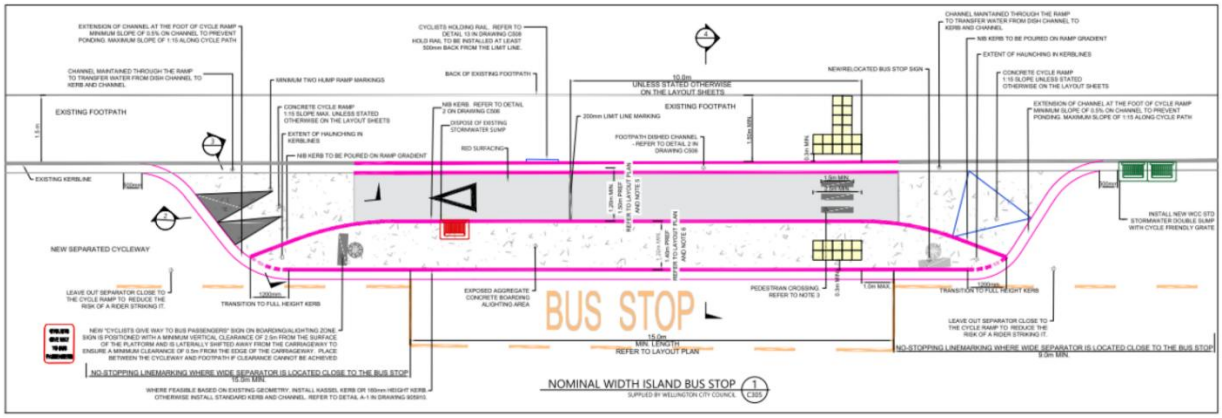


Figure 6: Drawing Sheet 500 - Shared Path by The Bus Stop

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on reduced user awareness due to the absence of red surfacing at the shared path, increasing the risk of conflict between cyclists (particularly electric bikes travelling uphill at a faster speed) and pedestrians near the bus stop.

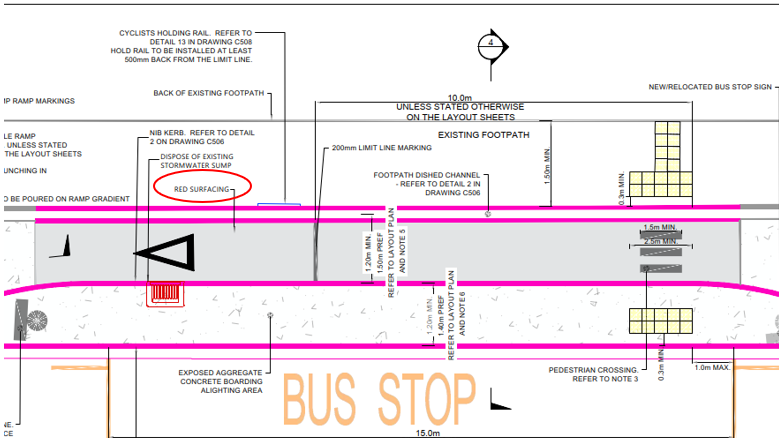
Probability of a crash	Crashes resulting from this safety concern are likely.

Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be serious.
Risk ranking	The safety concern is therefore deemed to be serious.

Recommendation(s)

1. Introduce red surfacing on the cycle path adjacent to the bus stop to warn cyclists of pedestrian activity and ensure the white crossing line is flush with the surface to prevent trip hazards.

Decision Tracking

Design team response	The red surfacing on the cycle path is already shown on the drawing C500 (Refer below snip) 
Client safety engineer comment	Agree with Designer response.
Client decision	Current NZTA guidance to be applied, designer to retain the red marking already shown on the drawing
Action taken	Drawings to remain as they are.

2.1.5 Multiple Manholes on Cycle Way **Moderate**

On Drawing sheet C305 and C306, several manholes are located along the cycle way (as shown in **Figure 7** and **Figure 8**). These surfaces can become slippery, particularly in wet conditions, posing a safety risk for cyclists**.** The reduced traction may lead to loss of control or falls, especially when cyclists are required to navigate over or around these features.

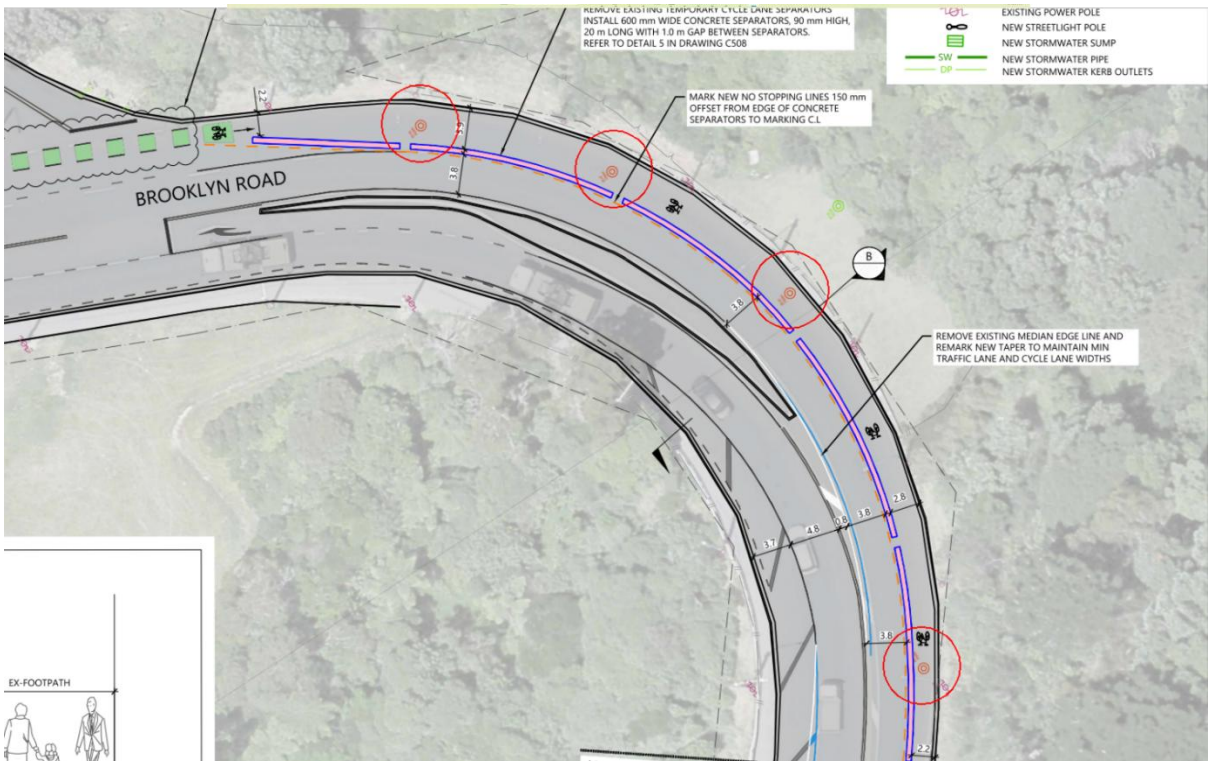


Figure 7: Drawing Sheet C305 - Multiple Manholes on Cycle Way

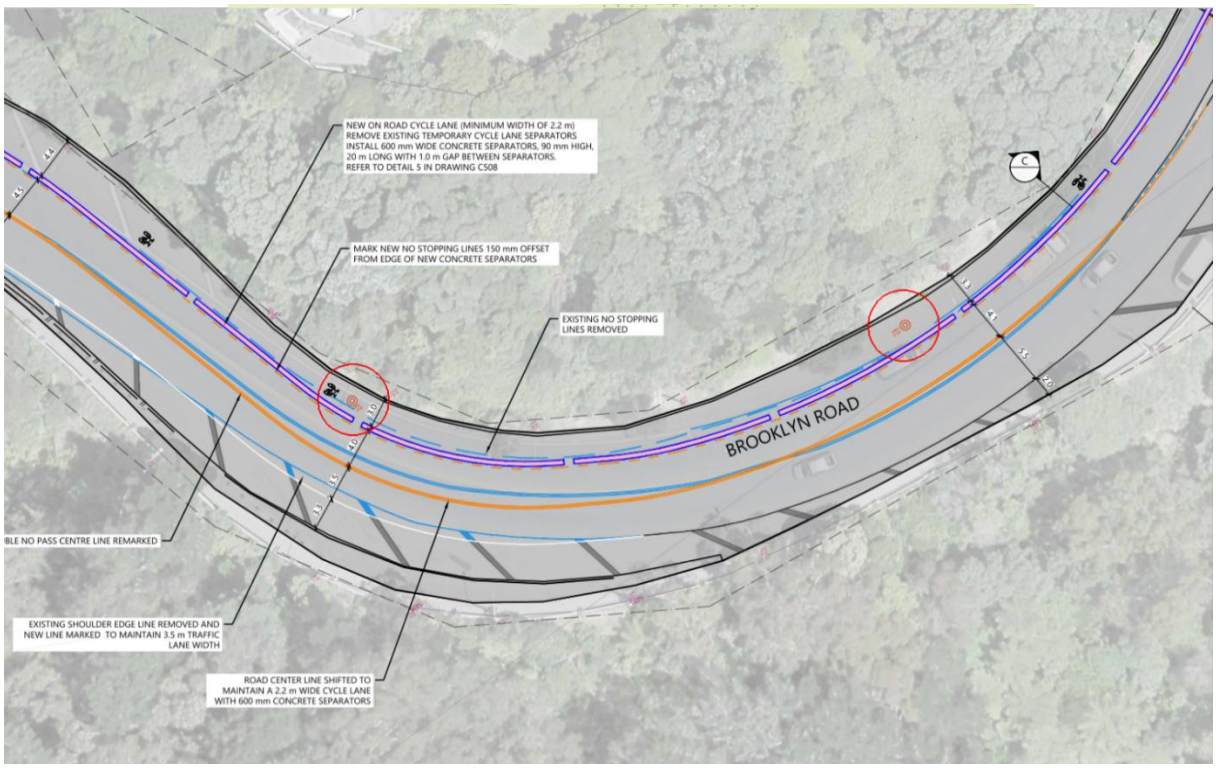


Figure 8: Drawing Sheet C306 - Multiple Manholes on Cycle Way

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on cyclists losing control due to slippery manhole surfaces along the cycle way, especially in wet conditions, increasing the risk of falls and injury.

Probability of a crash	Crashes resulting from this safety concern are likely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be minor.
Risk ranking	The safety concern is therefore deemed to be moderate.

Recommendation(s)

1. Use non-slip surfacing treatments on the manholes to ensure safe passage for cyclists in all weather conditions.

Decision Tracking

Design team response	Agreed. A non-slip surfacing treatment can be applied to the manhole lids and service chamber covers located within the cycle lane to enhance safety and reduce the risk of skidding.
Client safety engineer comment	Agree with Designer response.
Client decision	Designer to specify on drawings that non-slip surfacing treatment be applied to the manhole lids and service chambers located within the cycle lane during construction
Action taken	Instruction to contractor added to drawings

2.1.6 Stormwater Sump on Cycle Way **Moderate**

On drawing sheet C301, a stormwater sump is shown within the cycle way (as shown in **Figure 9**). During the site visit, the audit team assessed the remaining usable width and found that the sump's placement presents multiple concerns. In addition to potential safety risks from uneven or slippery surfaces, the sump significantly reduces the effective width of the cycle path. This narrowing may restrict safe passing and manoeuvring for cyclists, particularly in areas with higher cyclist volumes or limited space.

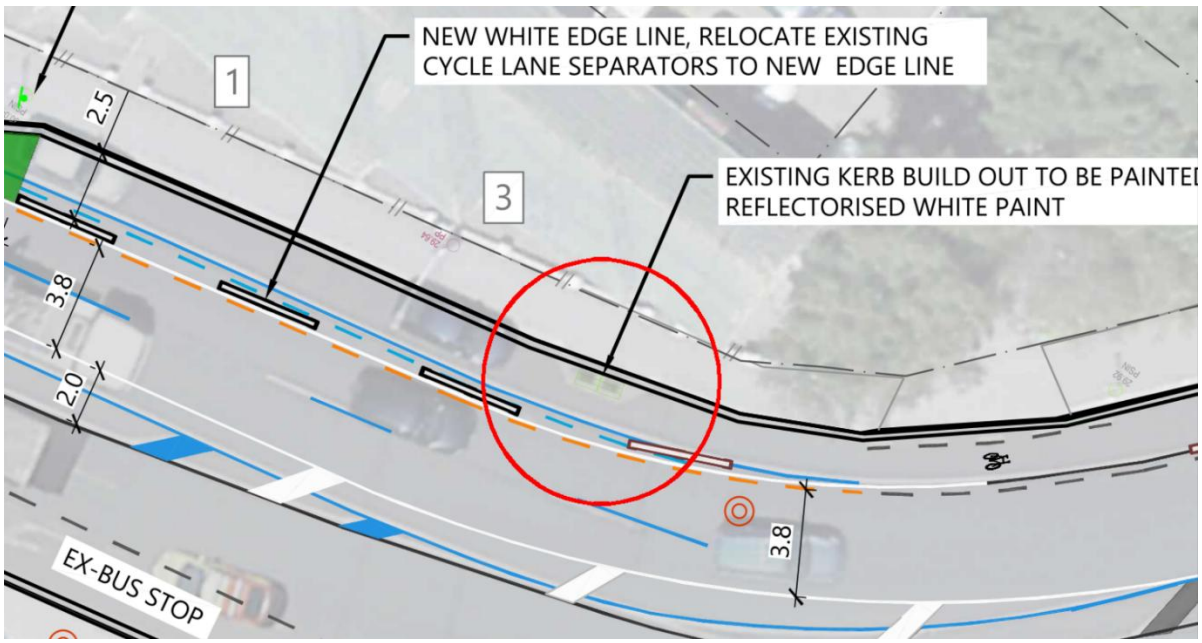


Figure 9: Drawing Sheet 301 - Stormwater sump on Cycle Way

Figure 10: Stormwater Sump on Cycle Way – On-site

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on reduced cycle path width and surface hazards from the sump, increasing the risk of cyclist instability.

Probability of a crash	Crashes resulting from this safety concern are likely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be minor.
Risk ranking	The safety concern is therefore deemed to be moderate.

Recommendation(s)

1. Ensure that all stormwater sumps located within the cycle way are fitted with bicycle-friendly, non-slip grates and are flush with the surrounding surface to maintain a smooth and safe riding experience.
2. Where feasible, consider relocating or redesigning the sump to preserve the full width of the cycle way and maintain a safe, unobstructed path for cyclists.

Decision Tracking

Design team response	Agreed, The stormwater sump can be replaced with a cycle-friendly, non-slip grate that is flush with the surrounding surface to improve safety and comfort for cyclists.
Client safety engineer comment	Agree with Designer response.
Client decision	Recommendation number 1 - Designer to update the drawings to reflect the stormwater sump to be replaced with a cycle-friendly non-slip grate that is flush with the surrounding surface. Recommendation number 2 – Altering the sump location will be a costly change, which is out of scope for this project
Action taken	Drawings updated

2.1.7 Exposed Sign Post Hole

Minor

While on-site, the audit team identified an exposed hole in the pedestrian footpath where a sign post had previously been removed (as shown in **Figure 11**). This presents a clear trip hazard, particularly for vulnerable users such as elderly pedestrians, children, and individuals with mobility impairments.

Figure 11: Exposed Sign Post Hole

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on a pedestrian catching their shoe / heel and falling .

Probability of a crash	Crashes resulting from this safety concern are very unlikely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be minor.
Risk ranking	The safety concern is therefore deemed to be minor.

Recommendation(s)

1. Fill and seal the hole promptly to eliminate the trip hazard and restore the integrity of the walking surface.

Decision Tracking

Design team response	Agreed, the hole can be filled and sealed to create a smooth finish footpath surface.
Client safety engineer comment	Agree with Designer response.
Client decision	Designer to add instruction to contractor on drawing that the hold should be filled and sealed to create a smooth finish footpath surface
Action taken	Drawings updated

2.1.8 Ghost Markings on Pavement **Serious**

While on-site, the audit team identified several instances of ghost markings, both faded or partially removed, that remain visible on the pavement. These remnants can cause confusion for both drivers and cyclists, especially when they appear near intersections, lane transitions, or cycle paths. Ghost markings may lead to misinterpretation of lane guidance or right-of-way, potentially increasing the risk of unsafe manoeuvres. This is of particular concern during wet / dark conditions.

Figure 12: Ghost Marking on Pavement - Part 1

Figure 13: Ghost Marking on Pavement - Part 2

Figure 14: Ghost Marking on Pavement - Part 3

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on drivers not anticipating the correct alignment and causing a head-on crash.

Probability of a crash	Crashes resulting from this safety concern are likely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be serious.
Risk ranking	The safety concern is therefore deemed to be serious.

Recommendation(s)

1. All ghost markings should be fully removed or resurfaced to eliminate visual clutter and ensure clear, unambiguous guidance for road users.

Decision Tracking

Design team response	The removal of ghost markings can be addressed concurrently with the planned resurfacing works on Brooklyn Road.
Client safety engineer comment	Agree with Designer response. Confirm that timing for resurfacing for removal of ghost markings is reasonable.
Client decision	Removal of ghost markings will be completed by the Reseal and Maintenance Team this summer. If this reseal work does not proceed this summer then Brooklyn Cycleway project will not proceed until the reseal on Brooklyn and Ohiro Rd is scheduled as the two pieces of work complement each other and efficiencies in TMP and kerbing work are being realised by the construction programmes aligning - it would not make sense to lose these efficiencies or to lay significant sections of concrete separators and paint for a cycleway only to reseal over it within a year
Action taken	Removal of ghost markings will be completed by the Reseal and Maintenance Team this summer. If this reseal work does not proceed then Brooklyn Cycleway project will not proceed until the reseal on Brooklyn and Ohiro Rd is scheduled

2.1.9 Vertical Indicators on Separators **Moderate**

While on-site, the audit team identified two instances where there are new cycle lane separators that are proposed to be installed but there are no vertical indicators provided at their commencement to assist drivers in identifying the separators. This increases the risk of drivers not noticing the separators and driving over them. This risk will be increased at locations where drivers turn left out of

the side street while looking right to filter into a gap while not noticing the proximity of the cycle lane separator.

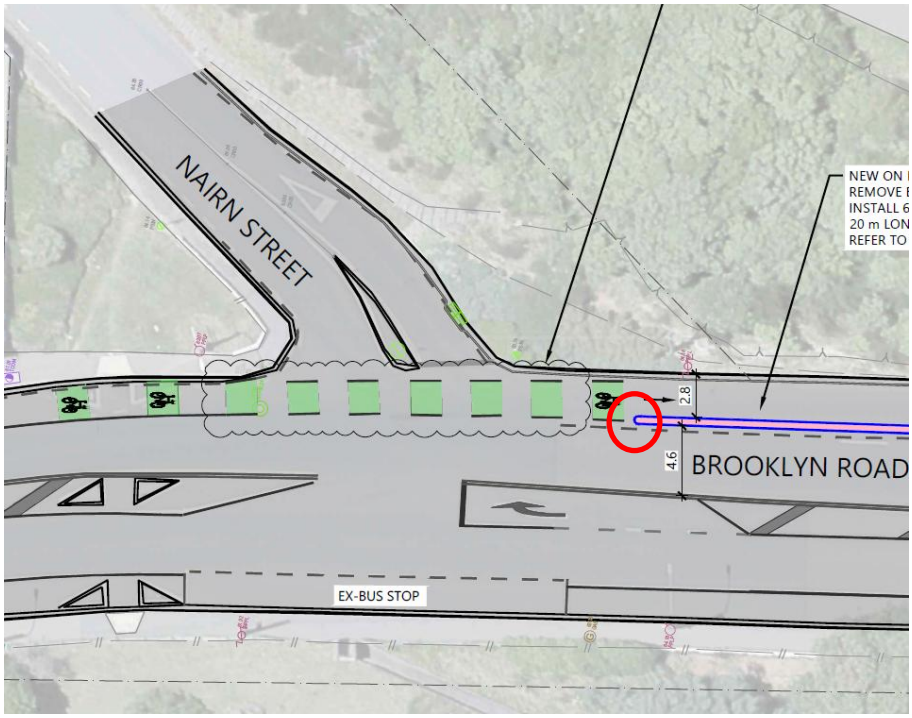


Figure 15: Lack of vertical indicators at Nairn Street

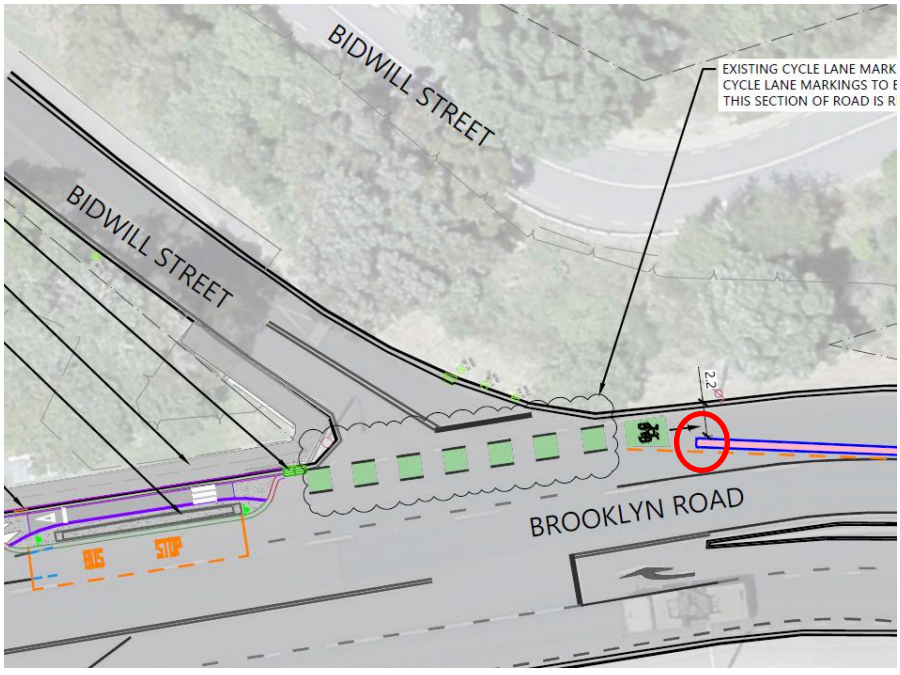


Figure 16: Lack of vertical indicators at Bidwill Street

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on drivers not noticing the cycle lane separators, crashing into this new vertical feature and losing control of their vehicle.

Probability of a crash	Crashes resulting from this safety concern are likely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be minor.
Risk ranking	The safety concern is therefore deemed to be moderate.

Recommendation(s)

1. Install several safe hit bollards or similar at the start of the cycle lane separator where it might be struck by an errant motorist.

Decision Tracking

Design team response	Agreed. Safe-hit posts, such as Vanguard's Ultraflex delineator posts, can be installed at the start of the cycle lane separators in locations with a higher risk of impact from errant motorists. This would provide added protection for cyclists while maintaining clear lane delineation.
Client safety engineer comment	Agree with Designer response. Check that the use of delineator posts at these locations is consistent with related T and I maintenance guidelines.
Client decision	Designer to update drawings to indicate that Vanguard Ultraflex delineator posts are installed at the start of the cycle lane separators in location with a higher risk of impact from errant motorists
Action taken	Drawings updated

2.2 Ohiro Road

2.2.1 Removal of Green Surfacing on Cycle Way **Significant**

Drawing sheet C308 indicates that some green surfacing on cycle way will be removed (as shown in **Figure 17**). This could lead to confusion for drivers, who may inadvertently merge into the cycle lane, and reduce visibility for cyclists.

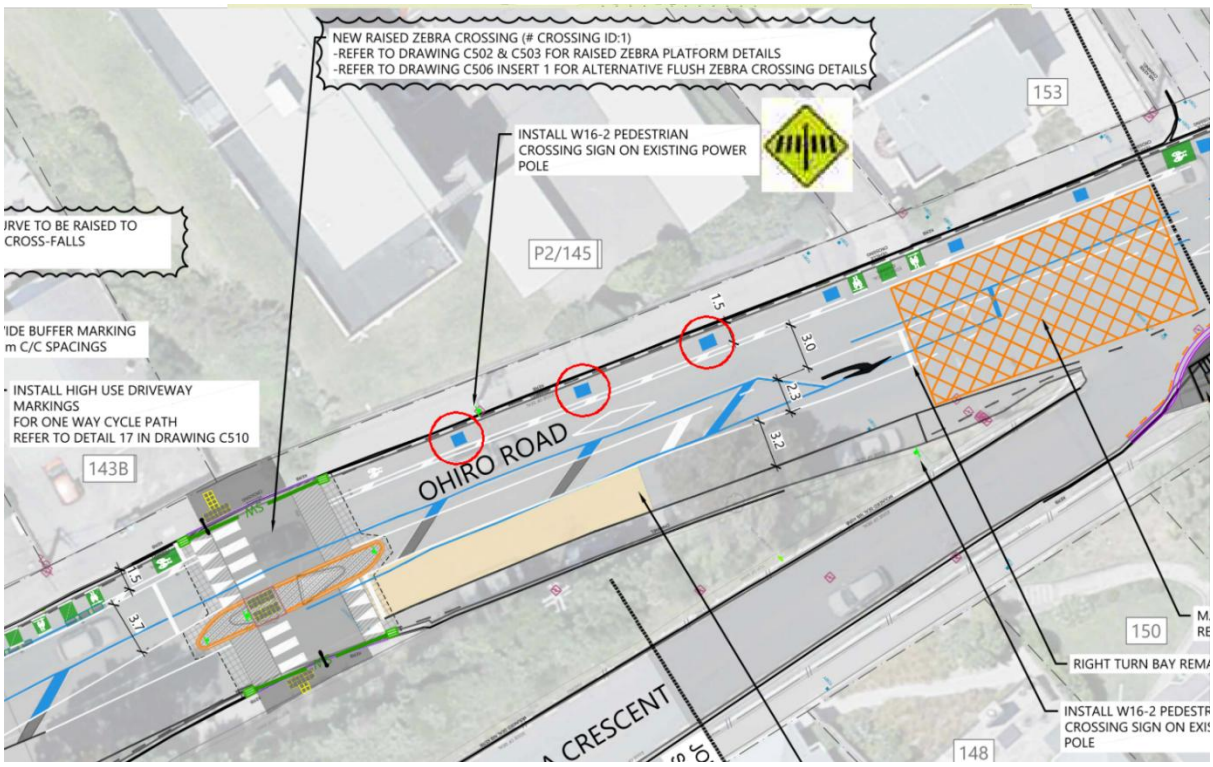


Figure 17: Drawing Sheet C308 - Removal of Green Surfacing on Cycle Way

Risk Ranking

The safe system audit team has assigned the following risk ranking to this safety concern.

The severity is based on reduced visibility of the cycle lane due to the removal of green surfacing, increasing the risk of drivers merging into the cyclist path.

Probability of a crash	Crashes resulting from this safety concern are unlikely.
Severity outcome rating	The predominant outcome of a crash resulting from this safety concern is likely to be serious.
Risk ranking	The safety concern is therefore deemed to be significant.

Recommendation(s)

1. Retain the green cycle lane markings to maintain clear separation between vehicle and cyclist paths and enhance safety for all road users.

Decision Tracking

Design team response	Agreed. Existing green markings on the cycle lane can be retained.
Client safety engineer comment	Agree with Designer response.
Client decision	Drawings to be updated to indicate that existing green markings on the cycle lane to be retained

Action taken	Drawings updated

2.3 Comments

2.3.1 Signage Encroachment

Comment

During the site visit, the audit team observed that overgrown vegetation is obstructing the visibility of road signage (as shown in **Figure 18**). This can prevent drivers from seeing important information in time, potentially leading to unsafe decisions or missed instructions.

Figure 18: Signage Encroachment

Recommendation(s)

1. Implement regular vegetation trimming and maintenance to ensure all signage remains fully visible to all road users.

Since this safety concern is ranked as a comment, decision tracking in the table below is optional.

Optional Decision Tracking

Design team response	Agreed. Regular vegetation trimming and maintenance should be carried out by Council's maintenance team to ensure all signage remains fully visible to all road users at all times.
Client safety engineer comment	Agree with Designer response. Ensure this is passed to T and I for action.
Client decision	This recommendation to be passed to Vegetation Maintenance Team
Action taken	Follow up with maintenance team

3 Audit Statement

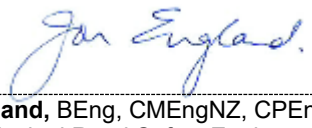
We declare that we remain independent of the design team and have not been influenced in any way by any party during this road safety audit.

We certify that we have used the available plans, and have examined the specified roads and their environment, to identify features of the project we have been asked to look at that could be changed, removed, or modified to improve safety.

We have noted the safety concerns that have been evident in this audit and have made recommendations that may be used to assist in improving safety.

Signed  Date 19/08/2025

Cobus de Kock, CPEng, BEng, MScEng, CMEngNZ, PrEng
Senior Principal Transportation Engineer / Traffic Engineer and Road Safety Lead, Stantec

Signed  Date 19/08/2025

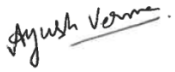
Jon England, BEng, CMEngNZ, CPEng, IntPE(NZ), RPEQ, PMP
Senior Principal Road Safety Engineer, Stantec

4 Response and Decision Statements

System designers and the people who use the roads must all share responsibility for creating a road system where crash forces do not result in death or serious injury.

4.1 Design Team's Responses

We have studied and considered the auditors' safety concerns and recommendations for safety improvements set out in this report and we have responded accordingly to each safety concern with the most appropriate and practical solutions and actions, which are to be considered further by the safety engineer (if applicable) and project manager.

Signed  Date 28 August 2025

Ayush Verma,
Senior Designer, Egis

4.2 Safety Engineer's Comment (if applicable)

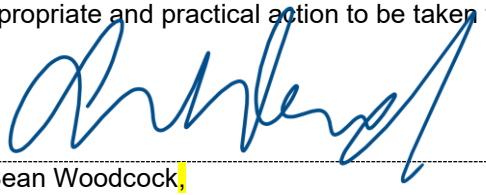
I have studied and considered the auditors' safety concerns and recommendations for safety improvements set out in this report together with the designer's responses. Where appropriate, I have added comments to be taken into consideration by the project manager when deciding on the action to be taken.

Signed  Date 28 August 2025

Dennis Davis
Principal Transport Engineer, WCC

4.3 Client's Decisions

I have studied and considered the auditors' safety concerns and recommendations for safety improvements set out in this report, together with the designer's responses and the comments of the safety engineer (if applicable) and having been guided by the auditor's ranking of concerns have decided the most appropriate and practical action to be taken to address each of the safety concerns.

Signed  Date 15/09/2025

Sean Woodcock,
Manager Transport & Infrastructure (interim)

4.4 Safe System Audit Close Out

The project manager is to distribute the audit report incorporating the decisions to the designer, Safe System audit team leader, safety engineer, and project file.

Signed _____ Date _____

name,
position, company

Stantec

Stantec is a global leader in sustainable architecture, engineering, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.