Te Ara Tipuna Trail

Transport Assessment and Management Plan

Prepared for Te Runanganui o Ngati Porou

July 2023

URBAN CONNECTION
local and connected

Contents

1. Introduction

1.1. Background

This report has been prepared for Te Runanganui o Ngati Porou as an overarching Transport Assessment and Management Plan to support the Resource Consent application for the Te Ara Tipuna Trail.

Te Ara Tipuna represents investment in sustainable base infrastructure in Te Tairawhiti, as a network of ara/ accessways around the East Coast, for local communities and visitors to hike, bike, and trek; and to provide the connection and catalyst for businesses and employment offering services, provisions and experiences.

In its entirety, Te Ara Tipuna is 500 kms traversing the rohe of Ngati Porou and of Te Whanau-a-Apanui, engaging with some of the most beautiful, rugged, isolated land and waterways of Aotearoa New Zealand; experiencing cultural icons of marae and mountains, and the unique character of its local people and communities.

The trail utilises a mix of trails along the coastal beaches, private land and adjacent to local roads and state highways. Figure 1 shows the extent of the trail. Depending on the use, i.e. hike, bike and horse trek, the trail takes varying routes and also has some side loops for points of interest.

The development of Te Ara Tipuna is currently at concept level, and a large-scale project. It is proposed that this Transport Assessment and Management Plan is used to support the approval of the transport related aspects of the project, recognising additional detail will be required as the level of detail for the design evolves for each stage. The project team will work closely with the relevant Roading Controlling Authorities throughout the detailed design process.

Figure 1 Te Ara Tipuna Route

This transport management plan focuses on the following typical interactions;

- areas where the trail runs adjacent to roads,
- intersects with them, and
- areas where parking provisions are to be provided for the trail users.

The purpose of the plan is to assist with the acceptance and approval of the standard design templates and interventions for treating these typical interactions for the majority of the project. At site specific locations where these standard templates and interventions are not appropriate, which will be the exception rather than the rule, site specific designs will be developed with a structured process for engagement with the relevant Road Controlling Authority (RCA) and staged Safe System Audits (SSA's).

1.2. Trail Users

The trail will be managed by a 'passport' system to allow management of the number of users. This system will control the numbers as the passports will be required to access the trail through the sections of private land.

2. Design Standard

2.1. Design Process

It is proposed to utilise a standard set of design standards for the majority of the trail. The proposed typical trail cross-sections for where the trail is within the road reserve and standard design treatments for road crossings are detailed in Section 2.2.

Site specific treatments will be developed for scenarios where these treatments may not be appropriate. These are likely to be at areas where the users may be;

- required to cross bridges,
- travel through pinch points within the road reserve,
- constrained by sight distance.

Each stage of the project development will have the following steps where the trail is within the road reserve:

- A site visit to undertake site measurements, identify pinch points, measure sight distance where required and determine the appropriateness of the standard treatments;
- Undertake a topographical survey as required;
- Develop plans to scheme level, including any site-specific treatments;
- Engage with the relevant RCA for feedback on the scheme design;
- Undertake a preliminary SSA;
- Engage with relevant RCA on the results of the SSA;
- Update design to detailed design level, including feedback from the RCA and SSA;
- Undertake a detailed design SSA;
- Update design to construction level, including feedback from the RCA and SSA; and
- Following construction, a post construction SSA will be undertaken and shared with the relevant RCA.

The project will have an element of continuous improvement in the design process as it will be implemented in a staged manner and the learnings from engagement with the RCA and from the completed SSA can be used in future stages.

2.2. Typical Trail Cross-sections

The extent of this project is too large to develop consistent cross-sections throughout. Typical cross-sections (Refer to Figures 2 – 7) have been prepared as a guideline only to be applied and adapted as appropriate to the constraints of the particular site. The cross-sections provided may not be appropriate in some cases where extreme ground instability or hazardous areas are present. In these circumstances site specific designs will be developed and worked through with the relevant RCA.

For context all the typical cross-sections for the proposed path are shown in Appendix A. These include those that are outside the road corridor. The relevant typical sections for the transport management plan are described in Table 1.

Table 1 Typical Trail Cross-section Descriptions

Cross-section	Name	Description
C/S 7	Narrow lane adjacent to state highway	For rural State Highways where there are width constraints. Separated from traffic lane by 0.5m and flexi-post bollards. 1 – 1.5m trail on unsealed shoulder.
C/S 8	Multi-lane path adjacent to state highway	For rural State Highways where there are not width constraints. Separated from traffic lane by 0.5m and flexi-post bollards. 1 – 1.5m trail on unsealed shoulder and additional space beyond which allows other trail users to pass.
C/S 9	Pathways adjacent to state highway in residential settlement	Utilises existing 1 – 2m cycle lanes on one side of the road and existing 2 – 3m footpath and berm for walking and horses.
C/S 10	Walkway alongside low-volume local road	For use on low volume roads. A 1.2m walkway constructed on the most practical side of the road.
C/S 11	Low volume local road: Utilising the existing carriageway	For use on low volume roads. Trail utilises one side of the existing carriageway for users.
C/S 12	Local road fit for purpose	Low volume local roads where trail users can either utilise the existing berm or the carriageway.

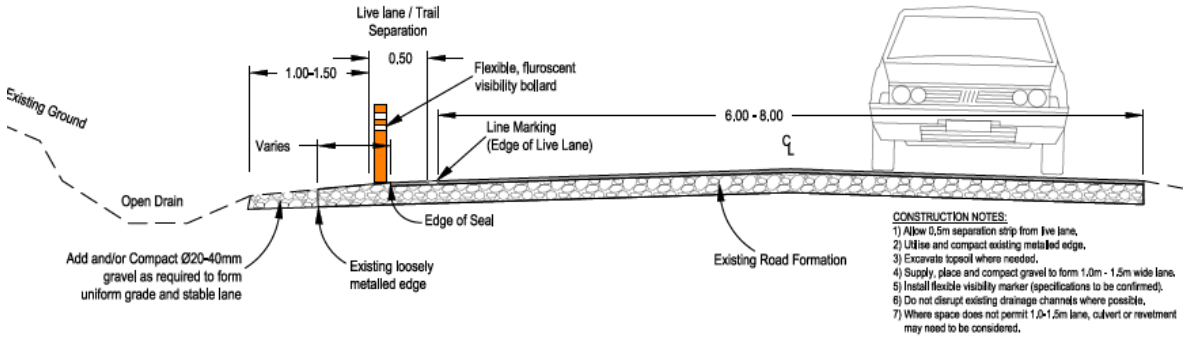


Figure 2 Typical Trail Cross-section 7: Narrow lane adjacent highway

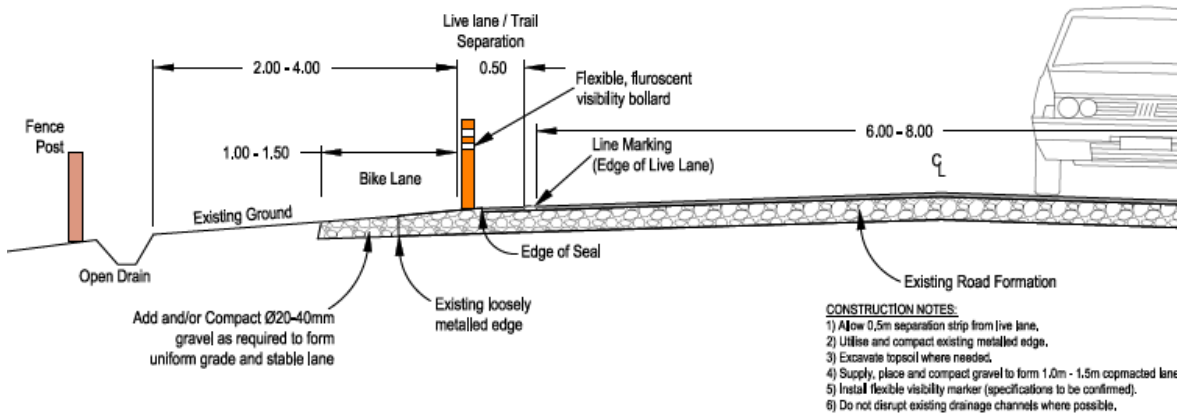


Figure 3 Typical Trail Cross-section: Multi-lane path adjacent to highway

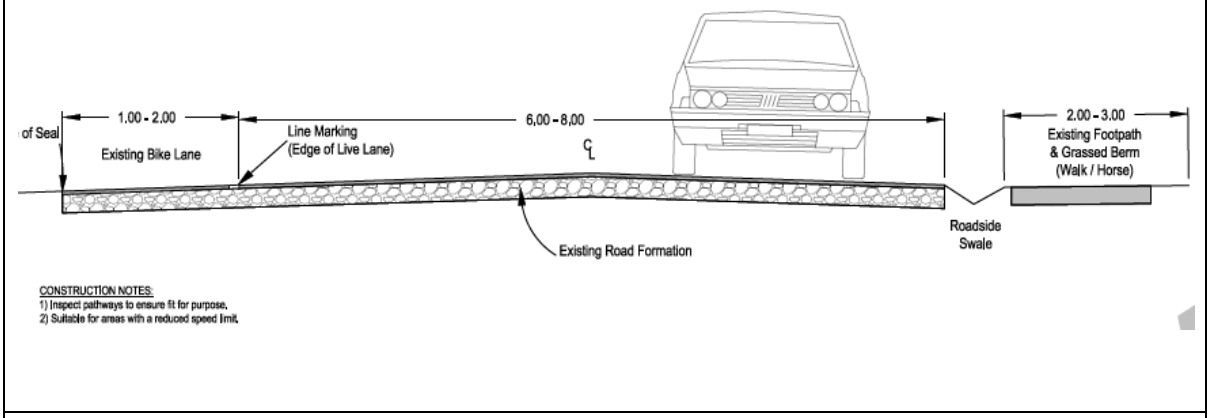


Figure 4 Typical Cross-section 9: Pathways adjacent highway in residential settlement

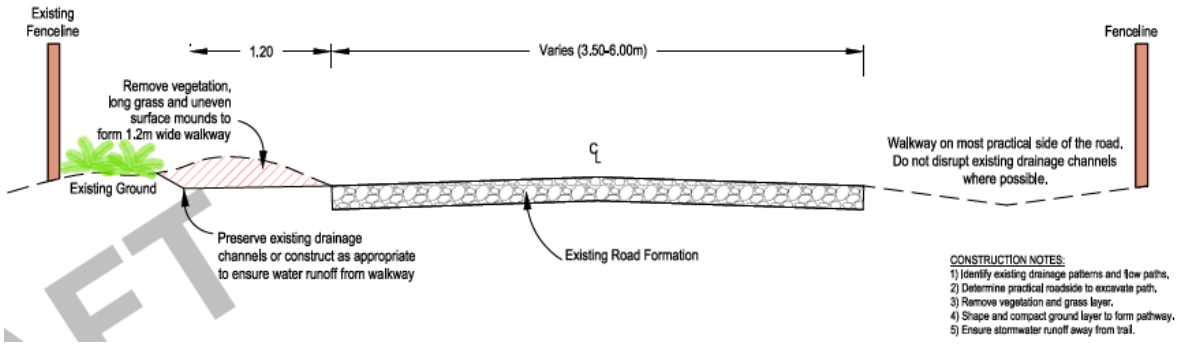


Figure 5 Typical Trail Cross-section 10: Walkway alongside low-volume road

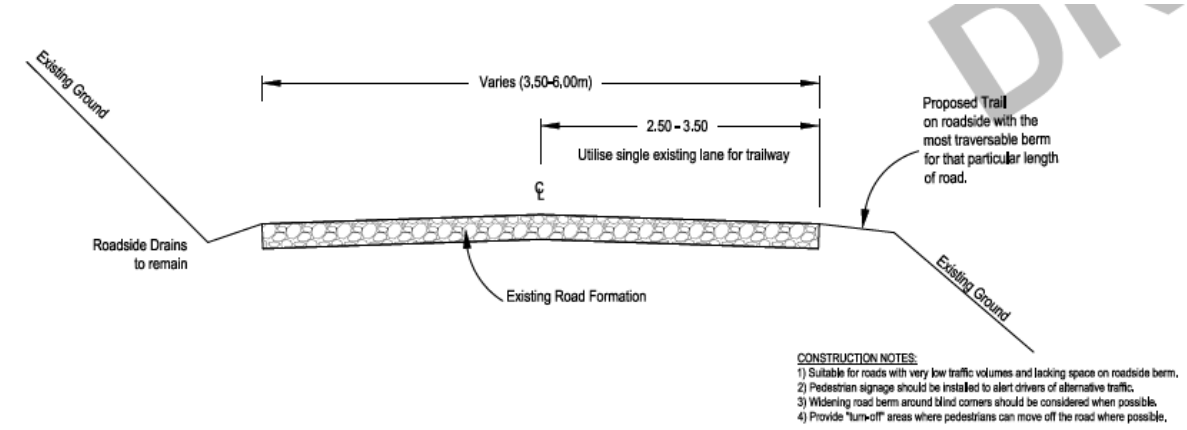


Figure 6 Typical Trail Cross-section 11: Low-volume road, utilising existing road carriageway

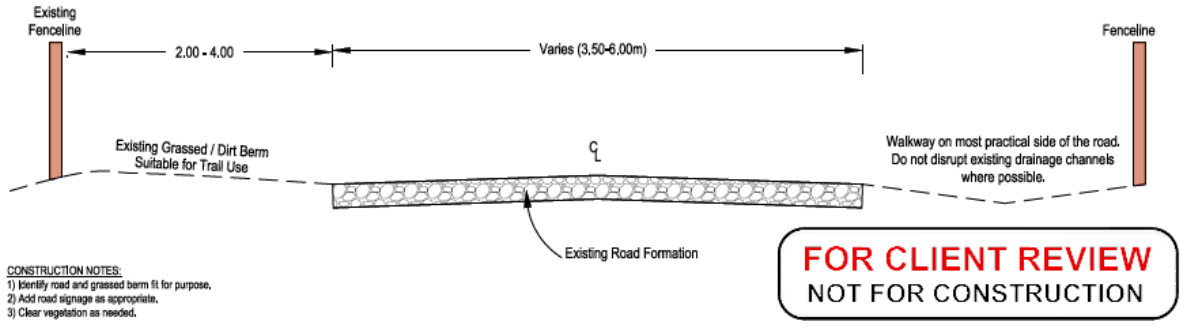


Figure 7 Typical Trail Cross-section 12: Existing local road fit for purpose

2.3. Road Crossings

2.3.1. Typical Pedestrian Crossing 1 – Low volume

This typical crossing point (Figure 8) should be used for all crossings on SH35 in the rural area, and for all crossings on local roads. The exact width will be determinate on whether it is for pedestrians/cyclists or horses, or a combination of two of these, or all three.

Trail crossings will cross the road at 90 degrees where possible to limit the crossing distance. The trail will have oncoming warning signs and wayfinding signs, and there will be advance warnings signs on the road, with at least 2 reminder signs. All crossings are to have at least the minimum forward visibility to enable a vehicle to safely stop before the crossing if a user steps out. There also needs to be adequate sight distance for trail users to ensure the road is clear in both directions before they safely cross over. The minimum stopping distances will be in accordance with Table 3.1, Austroads Guide to Road Design Part 4A. For a sealed road, with a posted 100 km/h speed limit, the approach sight distance required is 165m with a normal reaction time of 2 seconds. In a 50 km/h speed limit area, the sight distance required is 55m at 2 seconds reaction time. These distances should be clear of all foliage/tress/obstructions that are higher than 1m. These distances should also be provided for vulnerable user's sight distance requirements (refer to Section 3.3 in Austroads Guide to Road Design Part 4A). If these distances cannot be met, the crossing locations should be relocated to be as close as possible to these distances.

Appropriate speed management measures may be required on SH35 to slow down vehicles on the approaches to these crossings if appropriate sight distance cannot be met. This will be part of the ongoing process of discussions with the RCA's.

2.3.2. Typical Pedestrian Crossing 2 – Urban Area

In urban areas some existing facilities may be utilised. Where new facilities are required, they may include the installation of pedestrian refuges, kerb extensions combined with the relevant signage and markings. A pedestrian refuge will be included if the crossing distance is greater than 9m.

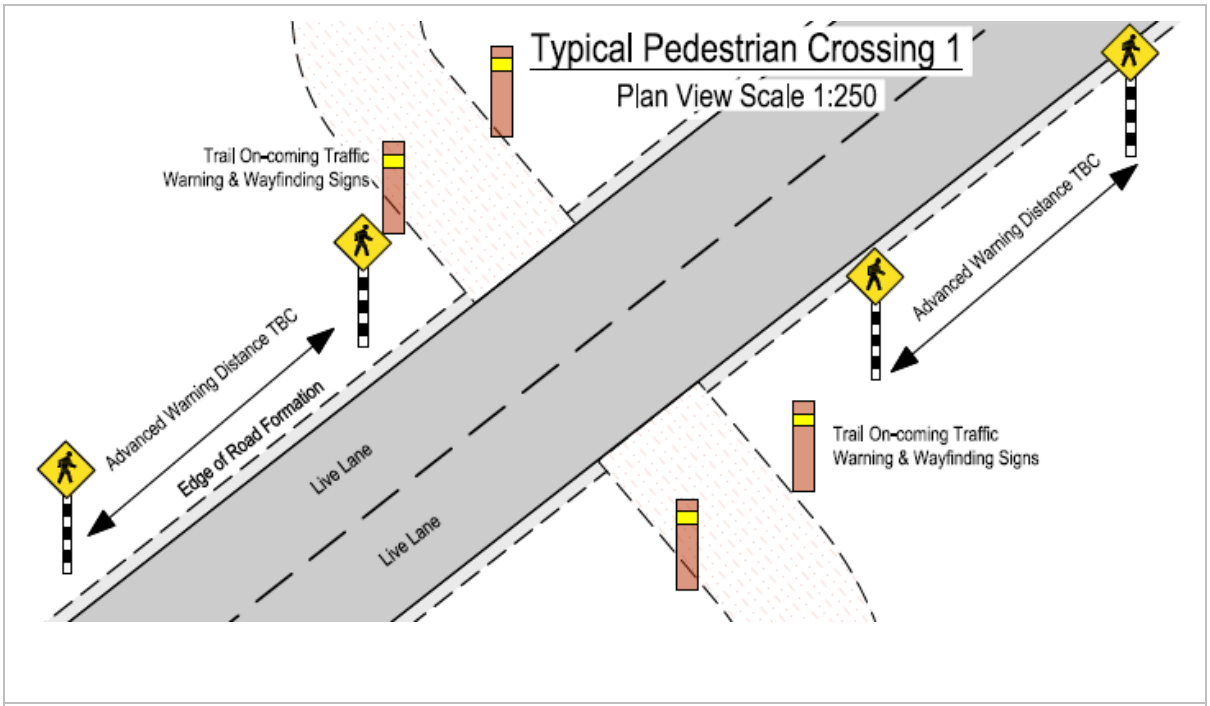


Figure 8 Typical Pedestrian Crossing 1: Low volume road crossing

2.4. Other Design Features

Some sections of the trail or crossing points may require additional engineering features to provide an appropriate level of service and safety. These will be assessed in more detail at the scheme design stage. These additional features may include:

- Priority control or passing bays – There may be locations where there are pinch points where the trail maybe narrower than desirable. In these locations priority control could be installed for the trail users (i.e. similar to a one-way bridge) and / or passing bays on the approaches to allow opposing users to wait safely;
- Speed management – There may be locations where the trail is closer to the road or highway than desired. In these locations speed management may be an appropriate and/or additional measure to be implemented;
- Electronic signs – User or sensor activated electronic signs may be utilised where the users are required to utilise existing bridges, at some crossing points or pinch points to advise motorists of their presence;
- Static signs – Traditional static signs may also be utilised in some locations to raise the awareness of motorists to the presence of the trail users adjacent to the road or crossing the road ahead;
- Traffic calming – This can take the form of various interventions including raised safety platforms, speed cushions, pedestrian refuges, audio tactile pavement markings, road markings, flexi posts, thresholds and gate ways. These may be used to reduce vehicle speeds where required;
- Sight distance improvements / widening on bends – Where required sight benching or widening may be constructed on curves;
- Street lighting – Lighting may be required at crossing points where refuges or kerb extensions may be required; and
- Shuttles – ultimately there may be sections where engineering solutions may not be able to mitigate risks and some form of shuttle service may be required.

3. Trail Summary

Each day of the trail has been summarised in Table 2. This details the relevant RCA, the roads where sections of the trail will be formed, the typical cross sections proposed, the type and number of road crossings, parking requirements and details on the bridges within that section of the trail.

Table 2 Summary of trail sections

Day	RCA's	Roads	Typical Sections	Road Crossings (No.)	Carpark	Utilise existing bridge or clip on (No.)	New clip on bridge	New bridge
1	Gisborne DC / Waka Kotahi	SH35, Makorori Beach Road. Tatapouri Rd	C/S 7, C/S 11	Type 1 (1), Type 2 (3)	Yes		Yes x 2 (SH35)	
2	Gisborne DC / Waka Kotahi	SH35, Pa Road Pouawa Road	C/S 7, C/S 10	Type 1 (2), Type 2 (1)				Yes (private)
3	Gisborne DC	Pakarae Rd, Waihau Rd	C/S 10	Type 1 (2)				Yes (private)
4	Gisborne DC / Waka Kotahi	Shelton Rd, Hauiti Rd, SH35, Cook St	C/S 10	Type 1 (2), Type 2 (1)		Yes (SH35)		Yes x 3 (private)
5	Gisborne DC / Waka Kotahi	SH35, Cook St, Kaiaua Rd	C/S 7, C/S 10	Type 1 (2), Type 2 (1)		Yes (Kaiaua Road)		Yes (private)
6	Gisborne DC	Kaiaua Rd, Lockwood Rd, Anaura Rd	C/S 10	Type 1 (1)				
7	Gisborne DC / Waka Kotahi	Anaura Rd, SH35, Kaiawha Rd	C/S 7, C/S 10, C/S 11	Type 1 (1), Type 2 (1)		Yes (SH35)		
8	Gisborne DC / Waka Kotahi	SH35, Waipiro Rd, Waikawa Road	Existing footpath, C/S 7, C/S8, C/S 10	Type 1 (2)			Yes (SH35)	Yes (private) Waikawa Stream
9	Gisborne DC / Waka Kotahi	SH35, Kiekie Rd, Kopuaroa Rd, Parapara	C/S 7, C/S 10, C/S 11	Type 1 (3)		Yes (local road)	Yes (SH35)	Yes (private)

		Rd, Whareponga Rd						
10	Gisborne DC	Whareponga Rd, Reporua Rd	C/S 10	Type 1 (3)		Yes		Yes (private)
11	Gisborne DC / Waka Kotahi	Reporua Rd, Tuparoa Rd, Walker Rd, Waiomatatini Rd, SH35	C/S 7, C/S 10	Type 1 (4)		Yes		
12	Gisborne DC / Waka Kotahi	Waiomatatini Rd, SH35	C/S 7, C/S 10	Type 1 (11)		Yes	Yes x 5 (SH35)	
13	Gisborne DC	Rangitukia Rd	C/S 10, C/S 11	Type 1 (4)				Yes x 2
14	Whakatane DC	Rangitukia Rd, East Cape Rd	C/S 10					
15	Whakatane DC	East Cape Rd, Moana Parade	C/S 10			Yes x 3	Yes	
16	Whakatane DC	Te Arawapia Rd, SH35, Onepoto Rd	C/S 7, C/S10	Type 2 (1)			Yes x 2 (SH35)	
17	Whakatane DC / Waka Kotahi	Wharf Rd, Wharekahika Rd, SH35	C/S 7, C/S 10, C/S 11	Type 1 (1), Type 2 (1)			Yes (Wharf Road)	Yes x 2 (private)
18	Whakatane DC / Waka Kotahi	SH35, Ngarue Road	C/S 7	Type 2 (3)			Yes x 2 (SH35)	
19	Whakatane DC / Waka Kotahi	Cape Runaway Rd, SH35	C/S 7, C/S 10,				Yes (SH35)	Yes (private)
20	Whakatane DC / Waka Kotahi	Orete Point Rd, SH35	C/S 7, C/S 10				Yes x 4 (SH35)	Yes x 2 (private)
21	Whakatane DC / Waka Kotahi	SH35	C/S 7	Type 2 (2)			Yes (SH35)	
22	Whakatane DC / Waka Kotahi	SH35, Waiorore Rd	C/S 7, C/S 10				Yes x 3 (SH35)	
23	Whakatane DC / Waka Kotahi	SH35	C/S 7				Yes (SH35)	Yes (private)
24	Whakatane DC / Waka Kotahi	SH35	C/S 7				Yes (SH35)	
25	Whakatane DC / Waka Kotahi	SH35, Opape Beach Road	C/S 7				Yes (SH35)	Yes (private)

26	Whakatane DC / Waka Kotahi	SH35, St John Street, Church Street	C/S 7			Yes (private)	Yes (SH35)	Yes (private)

4. Staging

The trail is likely to be implemented in stages. There will be stages which are easier to apply the standard interventions to, construct or involve predominantly private land and very low volume roads. These will be identified and evolved further in the initial period of the next phase.

Investigation and design of other sections which require more site-specific designs for some locations can carry on in parallel to this process with engagement with the RCA's to agree solutions.

Where there are gaps in the physical construction of the trail during the staging, shuttle services may be implemented to bridge these.

5. Conclusion

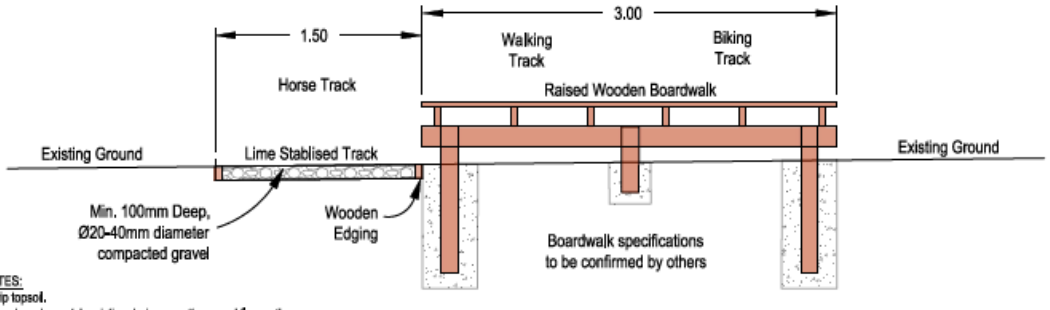
The trail, crossing points and bridge crossings can be implemented via standard engineering interventions with specific designs at some locations. The project team will work closely with the Road Controlling Authorities throughout the design process.

As outlined in Section 2.1, each phase of the design and construction will be subject to Safe Systems Audits.

Subject to these audits being completed and any issues addressed, the transport effects are considered to be minimal.

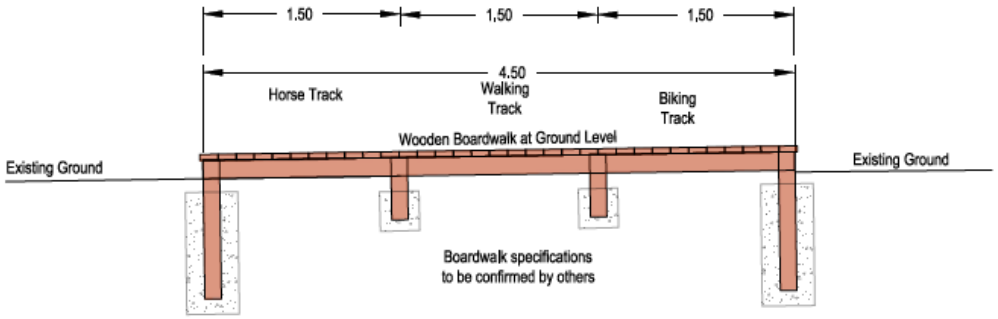
Appendix A – Cross-sections

Typical Trail Cross-section 1
Gold Tier



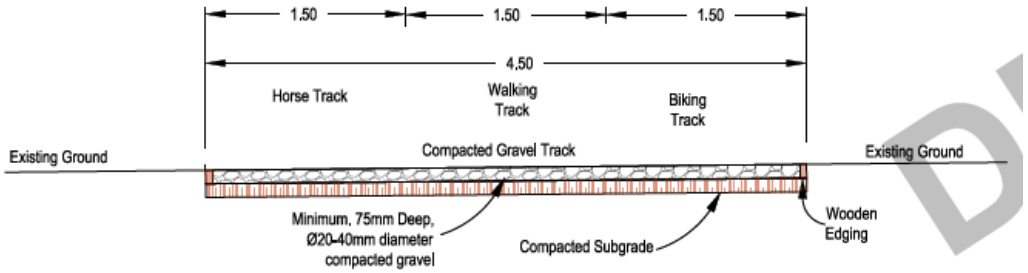
CONSTRUCTION NOTES:
1) Clear vegetation, strip topsoil.
2) Shape and compact subgrade, match existing drainage patterns and flow paths.
3) Supply, place, compact and lime stabalise the track.
4) Auger pile locations.
5) Construct boardwalk per design documentations.
6) Allow stormwater runoff below boardwalk.
7) Construction specifications by others.

Typical Trail Cross-section 2
Silver Tier



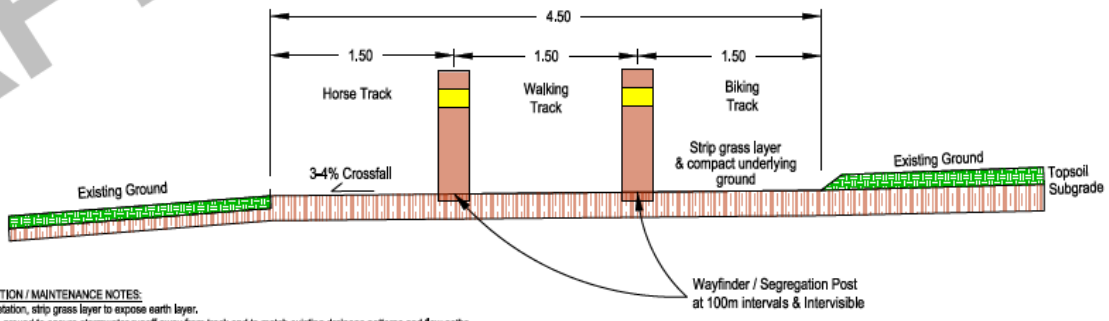
CONSTRUCTION NOTES:
1) Clear vegetation, strip topsoil.
2) Shape and compact subgrade, match existing drainage patterns and flow paths.
3) Auger pile locations.
5) Construct boardwalk per design documentations.
6) Support joists at ground level to run perpendicular to trail direction with spacings to allow stormwater runoff through the structure.
7) Construction specifications by others.

Typical Trail Cross-section 3
Bronze Tier



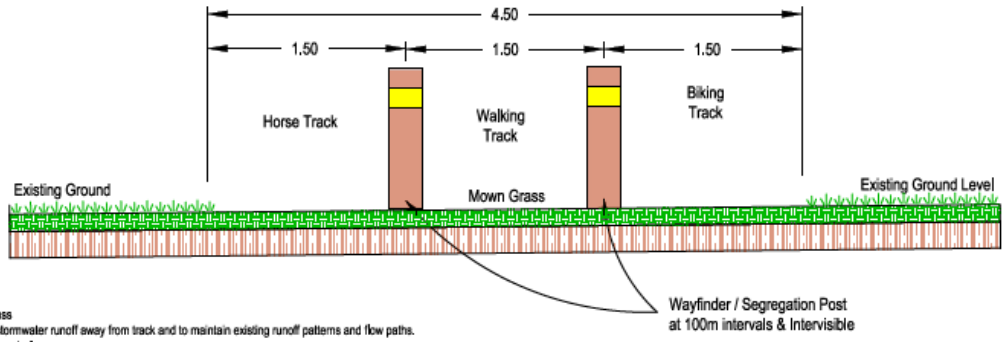
CONSTRUCTION NOTES:
1) Clear vegetation, strip topsoil.
2) Shape and compact subgrade, match existing drainage patterns and flow paths.
3) Install wooden edgings.
4) Supply, place, compact and lime stabalise the track.

Typical Trail Cross-section 4
Standard Track 1



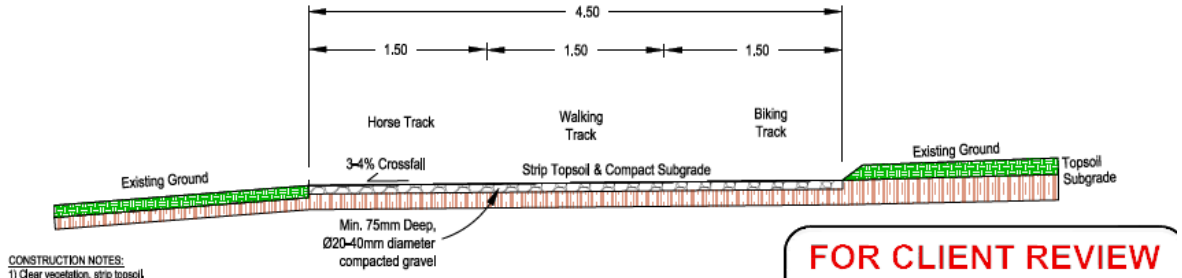
CONSTRUCTION / MAINTENANCE NOTES:
1) Clear vegetation, strip grass layer to expose earth layer.
2) Shape the ground to ensure stormwater runoff away from track and to match existing drainage patterns and flow paths.
3) Compact existing ground to form trailway.
4) Install wayfinders as appropriate (wayfinder specification and information TBC).
5) For sites where a dirt track is preferred and practical.
6) Regular maintenance to prevent grass regrowth.

Typical Trail Cross-section 5
Standard Track 2



CONSTRUCTION NOTES:
1) Clear vegetation and mow grass
2) Shape the ground to ensure stormwater runoff away from track and to maintain existing runoff patterns and flow paths.
3) Compact existing ground to form trailway.
4) Install wayfinders as appropriate (wayfinder specification and information TBC).
5) Suitable in areas where a grassed track is preffered and appropriate (e.g. through the back of rural hillside)
6) Cyclability of the track to be considered where bike access if envisioned.

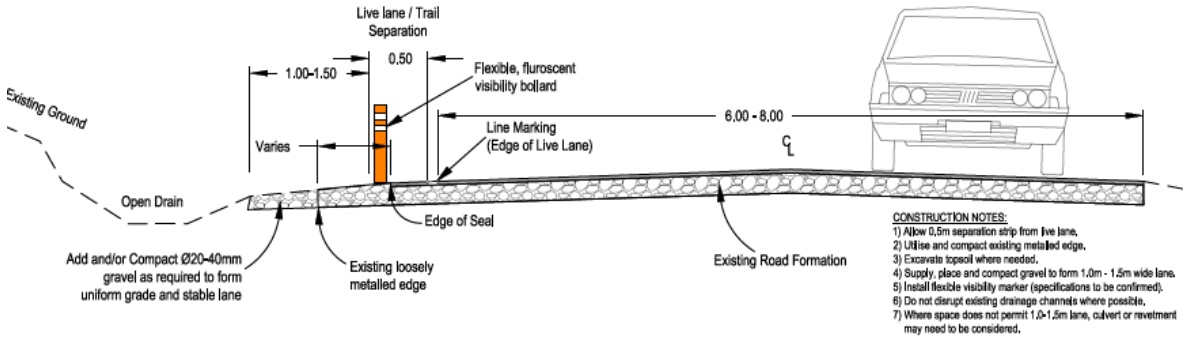
Typical Trail Cross-section 6
Standard Track - Steep or Unstable Ground



CONSTRUCTION NOTES:
1) Clear vegetation, strip topsoil.
2) Shape and compact subgrade, match existing drainage patterns and flow paths.
3) Supply, place, compact gravel track formation.

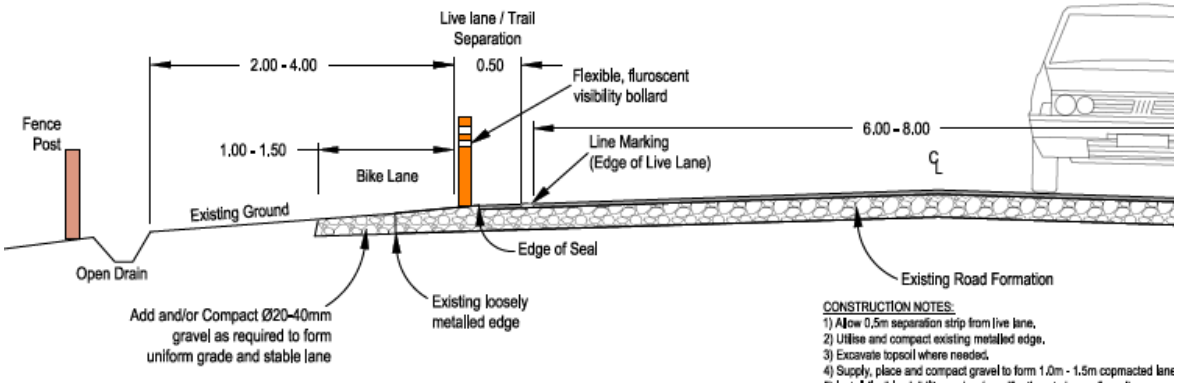
FOR CLIENT REVIEW
NOT FOR CONSTRUCTION

Typical Trail Cross-section 7
Narrow Lane Adjacent Highway



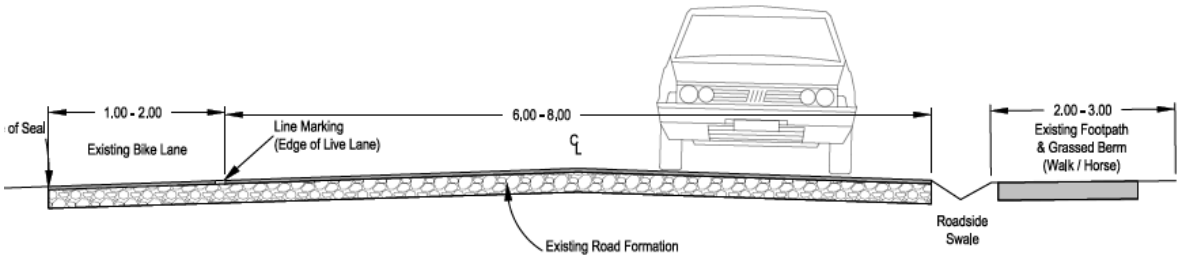
CONSTRUCTION NOTES:
1) Allow 0.5m separation strip from live lane.
2) Utilise and compact existing metalled edge.
3) Excavate topsoil where needed.
4) Supply, place and compact gravel to form 1.0m - 1.5m wide lane.
5) Install flexible visibility marker (specifications to be confirmed).
6) Do not disrupt existing drainage channels where possible.
7) Where space does not permit 1.0-1.5m lane, culvert or revetment may need to be considered.

Typical Trail Cross-section 8
Multi-lane Path Adjacent Highway



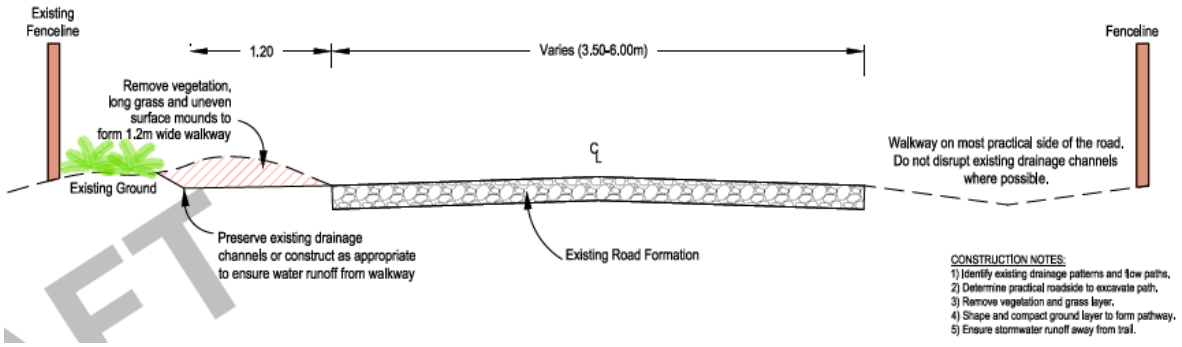
CONSTRUCTION NOTES:
1) Allow 0.5m separation strip from live lane.
2) Utilise and compact existing metalled edge.
3) Excavate topsoil where needed.
4) Supply, place and compact gravel to form 1.0m - 1.5m compacted lane
5) Install flexible visibility marker (specifications to be confirmed).
6) Do not disrupt existing drainage channels where possible.

Typical Trail Cross-section 9
Pathways Adjacent Highway in Residential Settlement



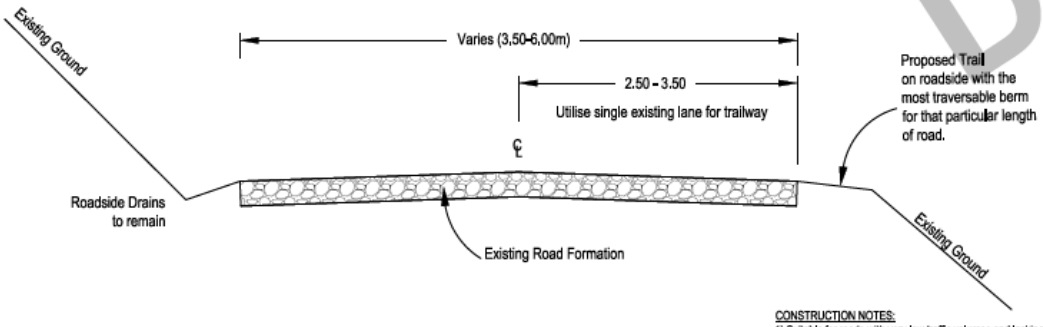
CONSTRUCTION NOTES:
1) Inspect pathways to ensure fit for purpose.
2) Suitable for areas with a reduced speed limit.

Typical Trail Cross-section 10
Walkway Alongside Low-Volume Road



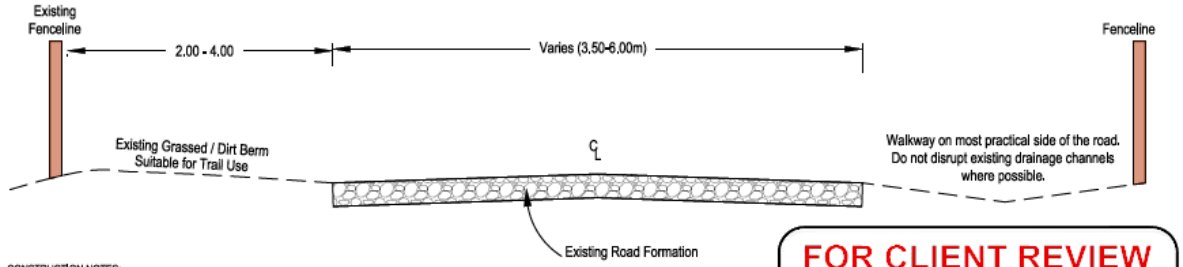
CONSTRUCTION NOTES:
1) Identify existing drainage patterns and flow paths.
2) Determine practical roadside to excavate path.
3) Remove vegetation and grass layer.
4) Shape and compact ground layer to form pathway.
5) Ensure stormwater runoff away from trail.

Typical Trail Cross-section 11
LV Road: Utilising Existing Road Carriageway



CONSTRUCTION NOTES:
1) Suitable for roads with very low traffic volumes and lacking space on roadside berm.
2) Pedestrian signage should be installed to alert drivers of alternative traffic.
3) Widening road berm around blind corners should be considered when possible.
4) Provide "turn-off" areas where pedestrians can move off the road where possible.

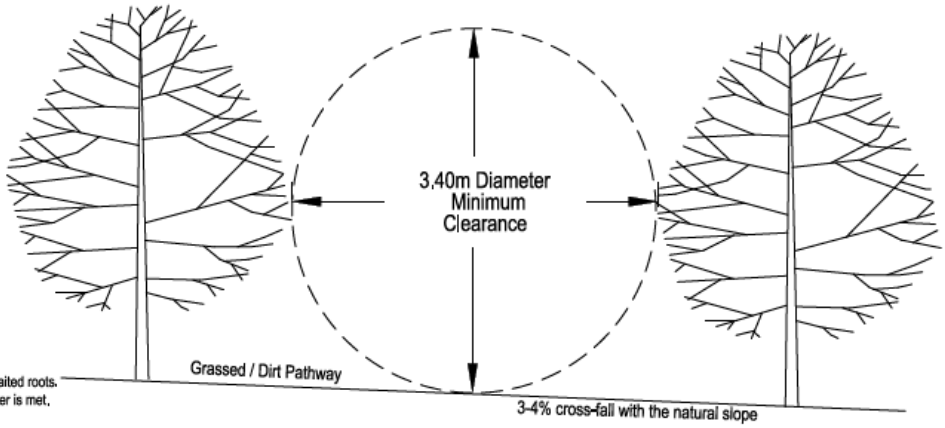
Typical Trail Cross-section 12
Existing Local Road Fit for Purpose



CONSTRUCTION NOTES:
1) Identify road and grassed berm fit for purpose.
2) Add road signage as appropriate.
3) Clear vegetation as needed.

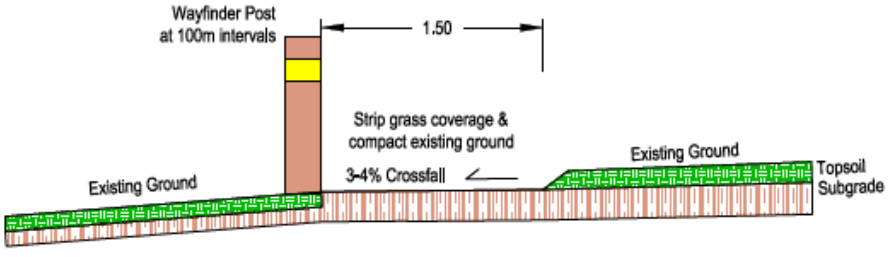
FOR CLIENT REVIEW
NOT FOR CONSTRUCTION

Typical Trail Cross-section 13
New Pathway Through Existing Vegetation



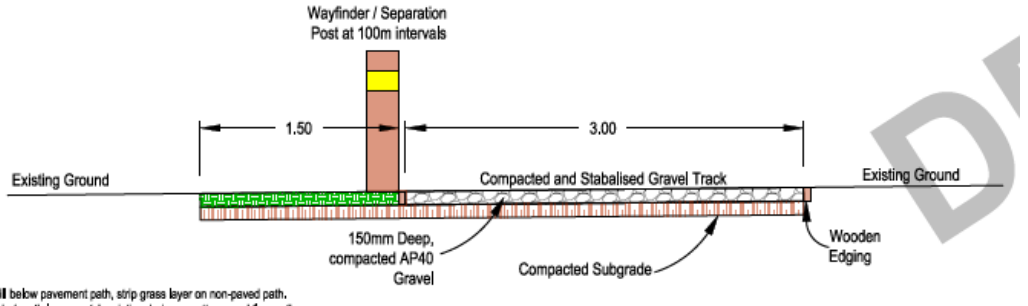
CONSTRUCTION NOTES:
1) Remove larger vegetations and assocaited roots.
2) Trim trees to ensure clearance diameter is met.
3) Remove top layer of grass.
4) Shape and compact underlying soil, maintain existing drainage paths.
5) Ensure wayfinding as appropriate.

Typical Trail Cross-section 14
Solo Bike Trail Through Rural Hillside



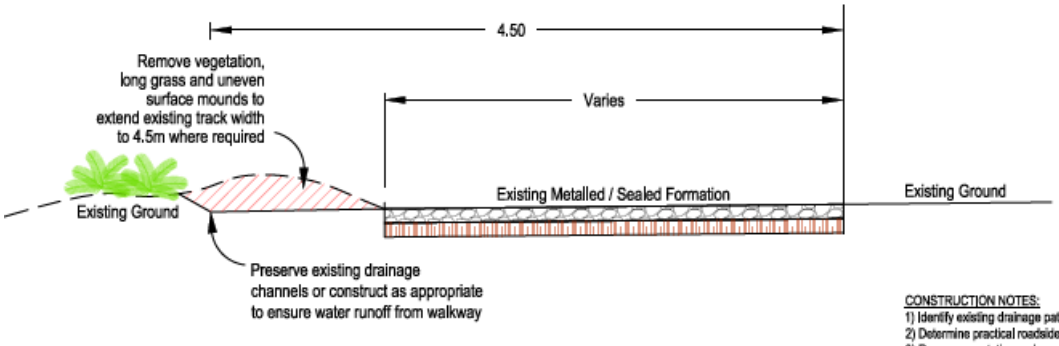
CONSTRUCTION / MAINTENANCE NOTES:
1) Clear vegetation, strip grass layer to expose earth layer.
2) Shape the ground to ensure stormwater runoff away from track and to match existing drainage patterns and flow paths.
3) Compact existing ground to form trailway.
4) Install wayfinders as appropriate (wayfinder specification and information TBC).
5) Regular maintenance to prevent grass regrowth.

Typical Trail Cross-section 15
Tokomaru / Ruatoria Trail (with ATV Use)



CONSTRUCTION NOTES:
1) Clear vegetation, strip topsoil below pavement path, strip grass layer on non-paved path.
2) Shape and compact subgrade / earth layer, match existing drainage patterns and flow paths.
3) Install wooden edgings.
4) Supply, place, compact and lime stabalise the track.

Typical Trail Cross-section 16
Existing Formation within Private Property or Paper Roadway



CONSTRUCTION NOTES:
1) Identify existing drainage patterns and flow paths.
2) Determine practical roadside to excavate path.
3) Remove vegetation and grass layer.
4) Shape and compact ground layer to form pathway.
5) Ensure stormwater runoff away from trail.

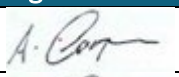
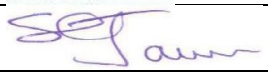
6. Disclaimer

This report has been prepared by Urban Connection Limited for Te Runanganui o Ngati Porou and may only be used and relied on by Te Runanganui o Ngati Porou for the purpose agreed between Urban Connection Limited and Te Runanganui o Ngati Porou as set out in this report. By default, this means that Te Runanganui o Ngati Porou can use and rely on this report for the purposes of supporting the consent application.

Urban Connection Limited otherwise disclaims responsibility to any person other than Te Runanganui o Ngati Porou arising in connection with this report. Urban Connection Limited also excludes implied warranties and conditions, to the extent legally permissible. The services undertaken by Urban Connection Limited in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. Urban Connection Limited has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

Te Ara Tipuna Transport Management Plan V4
Document Status: Final

Revision	Date of Issue	Author	Reviewer	
			Name	Signature
V1	21 June 2023	T Harrison	A Campion	
V2	30 June 2023	T Harrison	A Campion	
V3	4 July 2023	T Harrison	S James	
V4	10 July 2023	T Harrison	S James