

Before a Board of Inquiry
MacKays to Peka Peka Expressway Proposal

under: the Resource Management Act 1991

in the matter of: Notice of requirement for designation and resource consent applications by the NZ Transport Agency for the MacKays to Peka Peka Expressway Proposal

applicant: **NZ Transport Agency**
Requiring Authority

Statement of rebuttal evidence of **Noel Nancekivell** (Design – MacKays to Peka Peka Expressway) for the NZ Transport Agency

Dated: 25 October 2012

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STATEMENT OF REBUTTAL EVIDENCE OF NOEL NANCEKIVELL FOR THE NZ TRANSPORT AGENCY

- 1 My full name is Noel Robert Nancekivell.
- 2 I have the qualifications and experience set out at paragraphs 2 and 3 of my statement of evidence in chief, dated 5 September 2012 (*EIC*).
- 3 I repeat the confirmation given in my *EIC* that I have read, and agree to comply with, the Code of Conduct for Expert Witnesses (Consolidated Practice Note 2011).
- 4 In this statement of rebuttal evidence, I respond to the evidence of:
 - 4.1 Ms Emily Thomson, Mr Don Wignall and Mr Ian Munroe on behalf of the Kapiti Coast District Council (*KCDC*), (submitter number 682);
 - 4.2 Ms Sharyn Westlake on behalf of the Greater Wellington Regional Council (*GWRC*), (submitter number 684);
 - 4.3 Mr David Roil, Ms Sue Smith and Mr Aldous McIvor on behalf of the Waikanae on One (*WOO*), (submitter number 504);
 - 4.4 Dr Christopher and Mrs Monica Dearden, on behalf of themselves (submitter number 261); and
 - 4.5 Ms Loretta Pomare (submitter number 309) and Dr and Mrs Dearden questioning seismic conditions, liquefaction and ground conditions.
- 5 The fact that this rebuttal statement does not respond to every matter raised in the evidence of submitter witnesses within my area of expertise should not be taken as acceptance of the matters raised. Rather, I rely on my earlier technical report, my *EIC* and this rebuttal statement to set out my opinion on what I consider to be the key Engineering design matters for this hearing.
- 6 Consistent with my *EIC*, I have referred to the MacKays to Peka Peka Expressway Project as "the Project" in this rebuttal evidence.

EXECUTIVE SUMMARY

- 7 In response to *KCDC's* evidence, I note that:
 - 7.1 conceptual plans have been developed to begin consideration of the design of the intersection of the on and off ramps with Te Moana Road should traffic signals be required;
 - 7.2 the concepts developed for alternative access to Nga Manu have been appended to this statement; and

- 7.3 further work is being undertaken in relation to the design of the Mazengarb Road bridge.
- 8 In response to both KCDC and GWRC, I can confirm that provision is being made within the Project to allow for utility services.
- 9 I have considered the potential alternative design of the Te Moana interchange put forward by WOO. For the reasons I discuss below, I do not consider that the option proposed by WOO is a viable alternative to the alignment proposed by the NZTA.
- 10 I have considered the statement of evidence prepared by the Deardens and note that the design issues raised are primarily addressed in my EIC. However, I note that as a result of further design work the walkway/cycleway will now be located 120 metres from the Deardens' property boundary (rather than 15 metres as indicated in the application documents).
- 11 In relation to seismic conditions, I can confirm that the Expressway has been designed to ensure its serviceability should a seismic event occur.

EVIDENCE OF SUBMITTERS

Kapiti Coast District Council (Submitter 682)

- 12 KCDC has raised a number of issues in relation to the design of the proposed Expressway in its evidence in chief, in particular in the statements of Mr Don Wignall (traffic), Mr Ian Munro (urban design) and Ms Emily Thomson (planning). I have responded to the suggested amendments they propose under the topic headings set out below.

Treatment of Te Moana Road intersection

- 13 A number of the witnesses¹ for KCDC consider that traffic signals should be installed at the intersection of the on and off ramps with Te Moana Road. Currently the Expressway connects with Te Moana Road via two roundabouts and I discussed the consideration of controlling this intersection through traffic signals at paragraph 77 of my EIC.
- 14 In response to KCDC's evidence, plans have been developed showing traffic signals at this intersection and are attached to this statement of evidence as **Annexure A**. However, I wish to emphasise that these plans are indicative and the design of this intersection will require detailed input from traffic engineers (to confirm lane arrangement and ensure the required level of service is met). Urban and landscape designers will also need to have input into the design so as to allow comparison with the current round about design.

¹ Don Wignall section 6, Ian Munro para 10.8 - 10.12, Emily Thomson para 9.46.

- 15 For completeness, I note that this issue is also discussed in the rebuttal statements of **Mr Andrew Murray** and **Mr Marc Baily**.

Local road under and over bridges

- 16 Section 7 of Mr Wignall's evidence discusses the proposed local road underpasses and bridges along the Expressway alignment. At paragraph 7.2, he states that:

Insufficient detail is provided in the application with respect to the standard of local crossings (underpasses and bridges) in terms of the width and height clearances to be allowed for future access, services, drainage, pedestrian, security and other needs.

- 17 KCDC has been involved in the development of the proposed local road under and over passes along the Expressway alignment. I acknowledge that this information was not provided as part of the assessment of environmental effects (AEE). However, bridge drawings ST-BR-100 to ST-BR-960 (provided in Folder 1, Volume 5 of the application documents) and the cross sections drawings CV-SC-020 to 026 (Local Road Typical Cross Section) Appendix A of the Scheme Assessment Report² include details for each local road crossing and bridge clearance. I have attached the cross section drawings as **Annexure B**.

Nga Manu Access

- 18 At paragraphs 8.1-8.5 of his evidence, Mr Munro discusses the access to Nga Manu, and in response Ms Thomson proposes a condition, at paragraph 9.3 relating to the connection with Nga Manu. As noted at paragraph 120 of my EIC, concepts have been developed for alternative access to Nga Manu and will be included in the Project. These concepts are attached as **Annexure C**.
- 19 I understand NZTA has come to an agreement with KCDC that the proposed access road would be built to a standard that is commensurate with local arterial roads so that this road can function as an east-west local link road in future. As part of that agreement, the road would only be built to a higher standard than needed to provide access to the Nga Manu Nature reserve and Smithfield Road if funding is provided by KCDC for the difference in costs.

Mazengarb Road

- 20 Mr Munro and Ms Thomson³ raise concerns with the current realignment of Mazengarb Road. I refer to my EIC paragraph 123 where this is discussed.

² Available online at: <http://www.nzta.govt.nz/projects/mackays-to-peka-peka/sar.html>.

³ Ian Munro para 12.1 – 12.4, Emily Thomson para 9.46c.

- 21 As a result of further geotechnical investigations and design work undertaken following the lodgement of the application for the Project, it has now been determined that more extensive engineering will be required by reason of ground conditions. Specifically, ground beams will need to be installed under the road to support the retaining walls.
- 22 I understand that the NZTA acknowledges that the current design of the Mazengarb Road bridge raises urban design concerns, and the NZTA is committed to working with KCDC to develop a solution to address these. This is discussed further in the rebuttal evidence of **Mr Baily** and **Mr Robert Schofield**.

Provision for KCDC infrastructure in the Expressway's design

- 23 Mr Travis Wood has requested a number of conditions be included relating to the provision of a services corridor, replacement and or protection of services.⁴ **Mr Andrew Quinn** covers these issues in his evidence.
- 24 More generally, in response to Mr Wood, as stated at paragraphs 127 – 129 of my EIC, I note that capacity exists within the proposed designation footprint for the provision of a common services corridor along the Expressway. Specifically, allowance has been made for the provision of future water and waste water services on Waikanae Bridge. Provision has been made for watermains on the proposed Ngarara Road Bridge, and on other structures smaller services can be accommodated within the design.
- 25 The effect on KCDC services resulting from construction has been assessed and, should they be required, proposed works to KCDC services will be discussed with KCDC and their approval sought before work proceeds.

Greater Wellington Regional Council

- 26 Ms Westlake requests that allowance for future utility services be made on the Waikanae River Bridge.⁵ As discussed at paragraph 128 of my EIC, allowance has been made in the Waikanae River Bridge to provide for future utility services. This allowance includes provision for the larger water and wastewater services and also for the smaller infrastructure services including for electrical and telecommunication cables and gas pipes.

Waikanae On One (Submitter 514)
Design issues with the WOO option

- 27 WOO has raised concerns with the design of the Project between the Waikanae River and the Waimeha Stream.⁶ WOO propose an alternative alignment which is set out primarily in the evidence of

⁴ Travis Wood paragraph 5.19.

⁵ Statement of evidence of Sharyn Westlake para 29.

⁶ See the statement of evidence of Aldous MacIvor, in particular paragraph 18.

Ms Sue Smith (paragraphs 70-83 and in an annexure to her evidence). For the reasons discussed below, I do not consider that the option proposed by WOO is a viable alternative to the alignment proposed by the NZTA.

- 28 The alignment shown on the sketch submitted as an annexure to Ms Smith's evidence shows the Expressway further west than the NZTA's proposed alignment. This design would result in significant excavation of the dunes assuming a battered solution is used, creating a much wider footprint in a culturally significant area in which the intention was to reduce the overall impact. Alternatively, should retaining walls be used at this location these could be as high as 15 to 20 metres and would add significantly to the cost. As discussed by **Mr Boyden Evans**, either battered slopes or retaining walls would have significant adverse landscape effects. Further, as explained by **Ms Mary O'Keeffe**, cutting into this dune may also result in adverse archaeological effects.
- 29 This WOO proposal includes a low bridge 500 to 600 metres in length. This bridge is proposed to extend from the northern abutment of the Waikanae River Bridge to the crescent shaped dune. While the bridge would reduce the footprint, it would be significantly more expensive than an embankment solution as shown below in paragraph 33. **Mr Evans** discusses the landscape effects of the inclusion of the proposed bridge through this area. I refer to **Mr Evans'** evidence which includes a visualisation developed on the WOO design to allow a better comparison of the designs.
- 30 For completeness, I also note that the typical section of the embankment shown in Mr David Roil's evidence⁷ is incorrect, the correct cross-section of the proposed expressway is shown on Cross Section CV-SC-003.⁸
- 31 There is insufficient engineering design in the WOO proposal to state whether it would work or not. In principal, an option similar to that shown could be designed in accordance with the design standards required. However, as discussed further below, this would result in significant additional cost to the Project.
- Cost of the WOO option**
- 32 Two of the witnesses⁹ for WOO question the accuracy of my comments regarding their proposed option being significantly more expensive than the currently proposed option.
- 33 The inclusion of the 500 metre long bridge plus additional structures for flood way clearance, the local road passing over the Expressway

⁷ David Roil para 59.

⁸ Volume 5 of the application documents (folder 1 of 3).

⁹ Sue Smith para 82, Aldous MacIvor para 20.

and a structure over the Waimeha Stream, would add significantly more expense to the Project than the current design. I have quantified the estimated net cost in Table 1 below.

Table 1: Estimated cost of WOO option. The costs shown below include costs for ground improvements at the bridge abutments.

Description	Cost
Low Land bridge 550m in length allowed	\$39,000,000
Flood way bridge 40m in length, (culverts not suitable due to potential blockage issues)	\$3,700,000
Double bridge over expressway	\$9,700,000
Reduced road construction due to low bridge	-\$500,000
Reduce length of Te Moana Road Bridge	-\$ 1,600,000
Delete north bound on ramp bridge	-\$2,300,000
Additional local road	\$900,000
Total net cost	\$48,900,000
I note I have not taken into account property acquisition costs for either option. Nor any further engineering requirements (for example retaining walls) that may be required to implement the WOO design.	

Discussion with WOO

- 34 As set out at paragraphs 14-17 of Mr MacIvor's statement of evidence, members of the Project Alliance team (including myself), have met a number of times with WOO to discuss their proposal.
- 35 An initial meeting was held at the Alliance office in Wellington on 24 March 2011 where the WOO team presented their ideas. The Alliance team welcomed the suggestions, acknowledging that the aim of the group which was to try to provide the best outcome for the Waikanae community while recognising the need for the Expressway.
- 36 Another two meetings were held at the home of Ms Sue Smith.¹⁰ Following the last meeting, a written response was given to the WOO group which outlined the matters Ms Smith refers to at paragraph 84 of her evidence. I have included the letter in **Annexure D**, however I note that the design discussed in this letter differs from the design appended to Ms Smith's statement of evidence. WOO were also given opportunity to explain their

¹⁰ On 12 May 2011 and 15 July 2011.

concepts to the Waikanae Workshop held at El Rancho on Sunday 12 June 2011.

- 37 I can confirm that the Project Team considered WOO's suggestions very carefully, particularly as to whether any of the ideas could be included in proposed design. However, the ultimate conclusion reached by the wider team of experts and the Alliance Management Team was that the small reduction in visual impact resulting from the WOO proposal was outweighed by its additional cost, the potential impact on archaeological dune areas, and a more circulatory route.

**Dr Christopher Dearden and Mrs Monica Dearden
(submitter 261)**

Issues addressed in EIC

- 38 I have addressed a number of the concerns raised in the Deardens' evidence in my EIC. In particular:
- 38.1 Paragraph 2.16 states that minor upgrading to the existing state highway plus the construction of the Western Link Road would be a better option. I refer to paragraph 134 of my EIC where this is discussed. **Mr Murray** also addresses this matter in his rebuttal evidence.
- 38.2 Paragraph 2.17 suggests that building the Expressway over peat is problematic and very costly. I refer to paragraphs 31 to 34 of my EIC where this is discussed. Discussed. **Mr Graeme Ridley** also addresses this matter in his rebuttal evidence.
- 38.3 Paragraph 2.27 suggests that taking the Expressway over the local roads in many cases will divide the community further and create adverse effects. I refer to my EIC where this is discussed for each of the bridge sites, in particular paragraphs 76 to 81 for Te Moana Road. **Mr Baily** also addresses this matter in his rebuttal evidence.

Issues relating to the cycleway/walkway

- 39 At paragraph 3.10 of their evidence, the Deardens' raise a concern regarding the location of the cycleway/walkway. Since lodging the application for the Project, alternatives have been considered and the NZTA's preferred route of the cycleway/walkway runs the western end of Puriri Road on the bund adjacent to the Expressway. The proposed cycleway/walkway location would be 120 metres from the Deardens' boundary instead of the 15 metres shown in the application documents.
- 40 Barriers to prevent motor cyclists from using this facility will be developed as part of detailed design.

Seismic conditions, liquefaction and ground conditions

- 41 The Deardens and Ms Pomare¹¹ question the selection of route in an area of high seismicity and potential for liquefaction. I refer to my EIC at paragraphs 36, 37 and 136 where this is discussed.
- 42 Their evidence expresses concern that, while the bridges are designed to withstand particular seismic events, the adjoining roads may not be passable. I can confirm that consideration has also been given to ensure the serviceability of the Expressway away from the bridge structures.¹² While there will be varying levels of displacement depending on the size of the seismic event, the Expressway has been designed to ensure emergency service vehicles will be able to use the Expressway should a significant seismic event occur.
- 43 The design standard for embankments beyond the Expressway bridges and for the bridges which carry local roads over the Expressway is a 1 in 1000 year earthquake. Under such an event, the Expressway embankments are expected to experience less than 300mm ground movement. Any resulting disruption of the road surface from such movement will be easily repaired to allow passage of emergency traffic. The bridges carrying traffic over the Expressway will be designed in accordance with the NZTA Bridge Manual, which required that they do not collapse and that they are repairable after the design (1 in 1000 year) event.



Noel Robert Nancekivell

25 October 2012

¹¹ Christopher & Monica Dearden para 2.19, Loretta Pomare para 60, 70.

¹² Scheme Assessment Report Section 7.3.6 Seismic Ground Improvements (Road Embankments).

**ANNEXURE A – PLANS SHOWING USE OF TRAFFIC SIGNALS
AT THE TE MOANA ROAD INTERSECTION**



LEGEND: SCHEME PLANS

	DESIGNATION
	PROPERTY BOUNDARY
	QEII COVENANT LAND
	PROPOSED BRIDGES
	TRAFFIC ISLAND PAVEMENT
	ROAD PAVEMENT
	FOOTPATH
	CYCLE LANE

NOTES:

STRUCTURES NOT SHOWN FOR CLARITY.

EARTHWORKS BATTERS NOT SHOWN FOR CLARITY.



**FOR INFORMATION
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No.	Revision	By	Chk.	Appd.	Date
A	FOR INFORMATION	CH			20.10.12

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Reduced Scale (A3)	1:2000	Drawn	CH	20.10.12	Date
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		Design Check			
* Refer to Revision 1 for Original Signature					

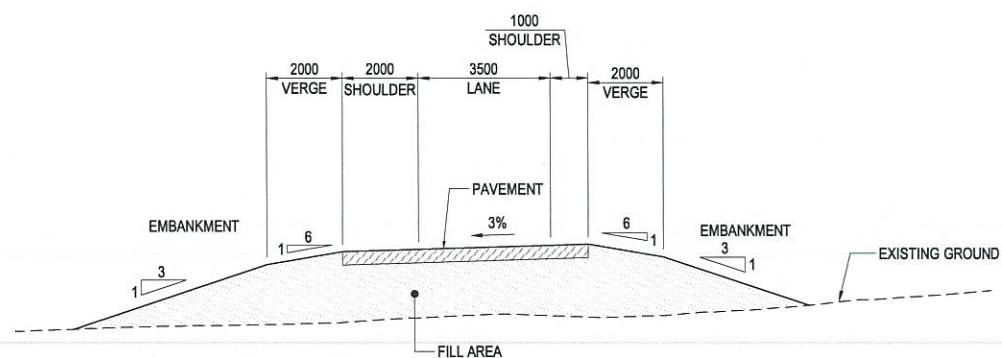
Mackays to Peka Peka

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

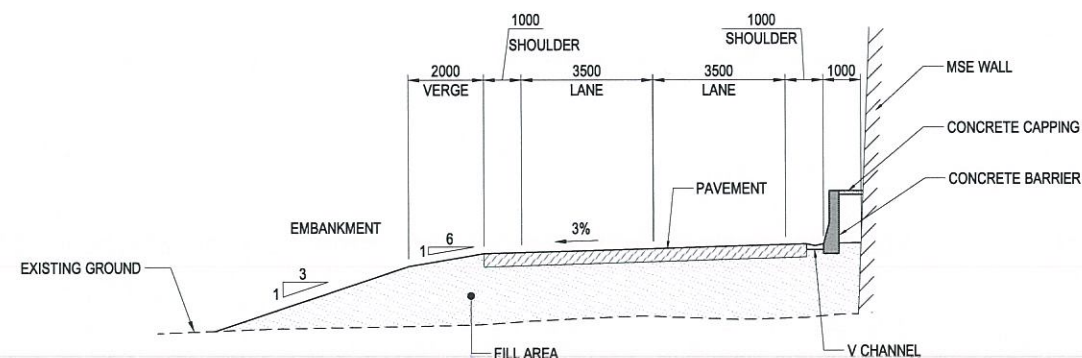
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TE MOANA RD TRAFFIC SIGNALS
CONCEPT DESIGN

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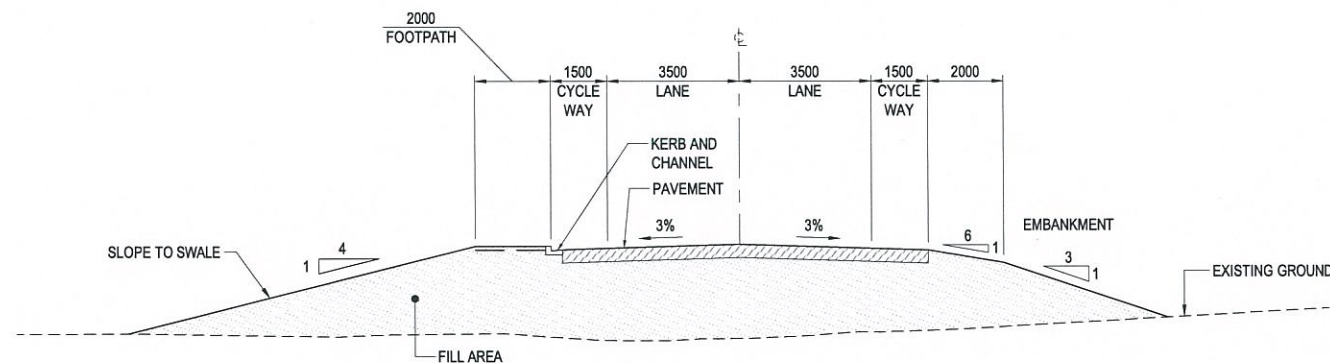
**ANNEXURE B – CROSS SECTION DRAWINGS CV-SC-020 TO
026 (LOCAL ROAD TYPICAL CROSS SECTION)**



TYPICAL SINGLE LANE RAMP (IN FILL)
 BARRIER IN VERGE WHERE HEIGHT > 2.5m
 1:100



TYPICAL TWO LANE RAMP AT KAPITI
 1:100



TYPICAL SECTION - POPLAR AVE INTERSECTION
 LEVEL OF ROAD TO BE CLOSE TO EXISTING TO MINIMISE FILL
 1:100

NOTES:

1. EMBANKMENT SLOPES WILL INTERCHANGE WITH SLOPE TO SWALE DEPENDING ON SPECIFIC LOCATION.

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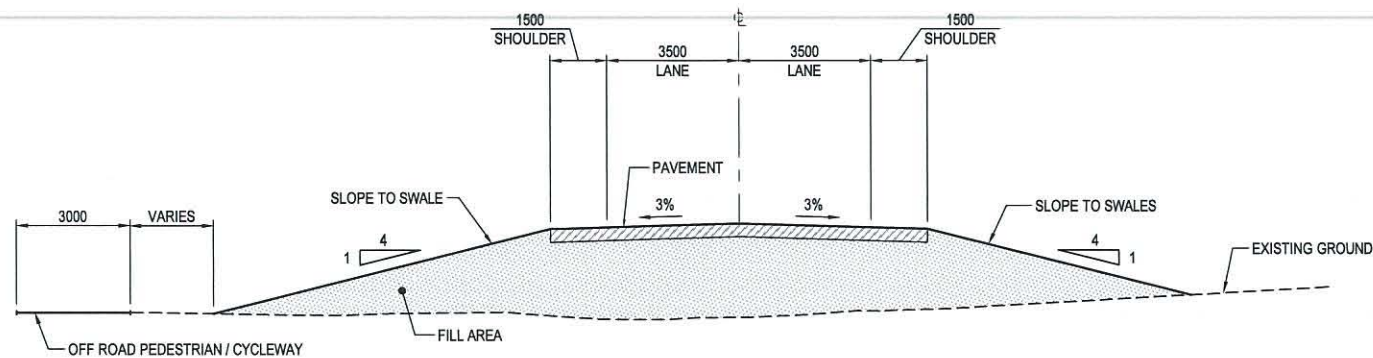
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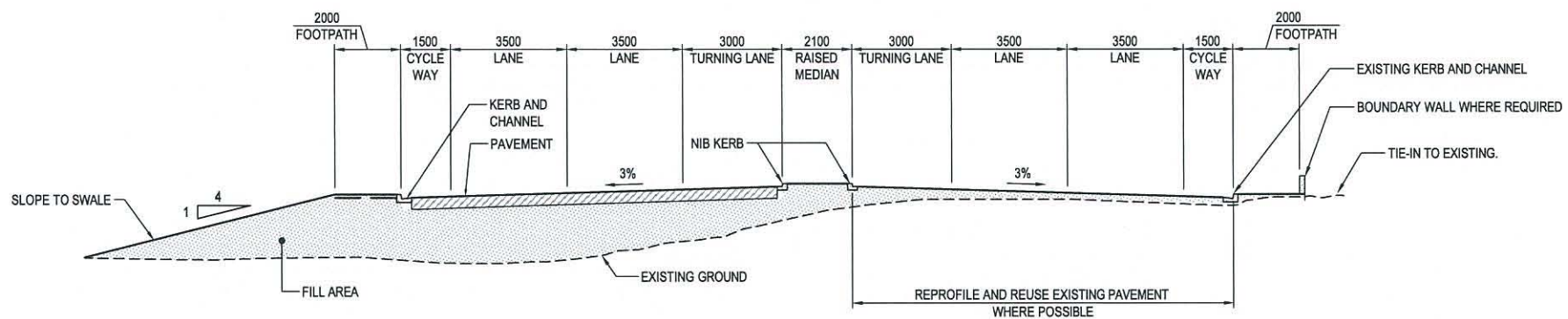
Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
 RP 1012/0.00 TO 1023/5.00

Title: LOCAL ROADS
 TYPICAL CROSS SECTION
 SHEET 1 OF 7

Document Set	M2PP-SAR-DWG
Drawing No.	CV-SC-020
Rev.	A



TYPICAL SECTION - POPLAR AVE
1:100



TYPICAL SECTION - WIDEST SECTION ON KAPITI ROAD
1:100

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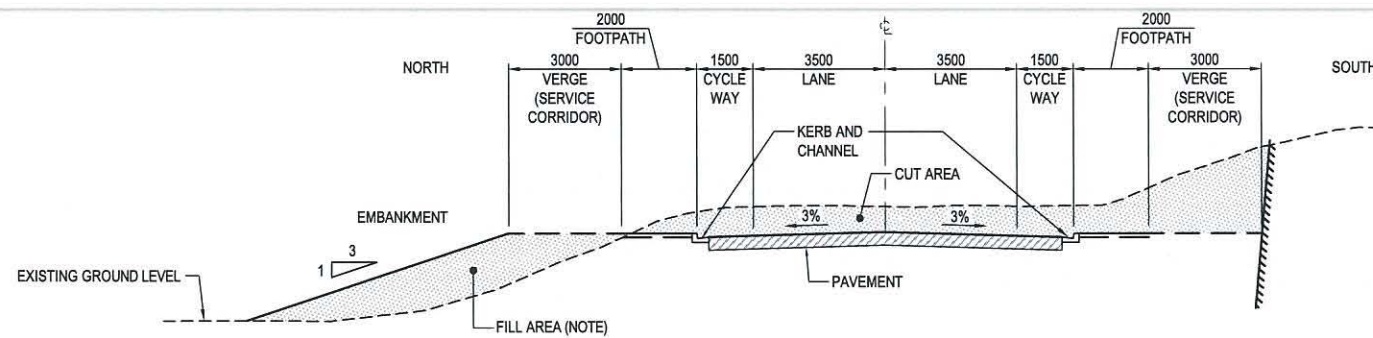
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Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

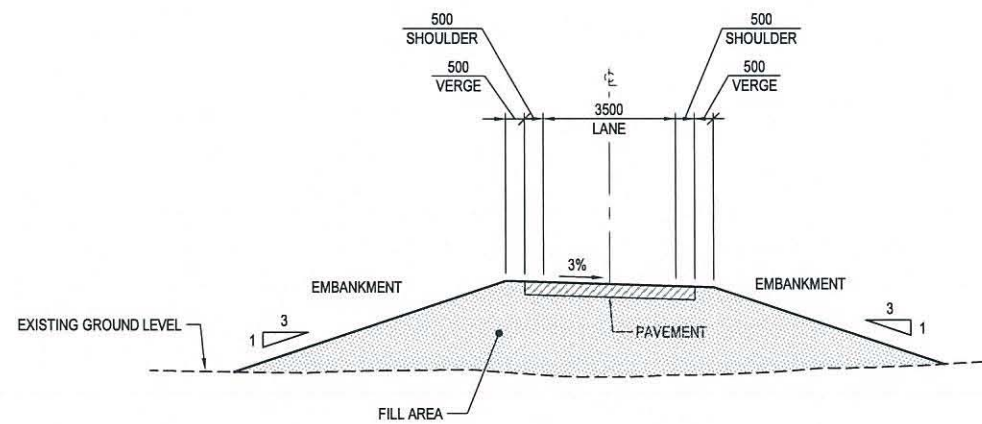
Title: LOCAL ROADS
TYPICAL CROSS SECTION
SHEET 2 OF 7

Document Set	M2PP-SAR-DWG
Drawing No.	CV-SC-021
Rev.	A



NOTE:
WHERE RETAINING WALL IS USED TO RETAIN
FILL THE VERGE WIDTH IS REDUCED TO 2000

TYPICAL SECTION - MAZENGARB ROAD
1:100



TYPICAL SECTION - OTAIHANGA ACCESS ROAD
1:100

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A	FOR PRICING	JK	DGS	NRN	07.07.11

Original Scale (A1)	Design	PC	17.06.11	Approved for SAR
Reduced Scale (A3)	Drawn	JK	30.06.11	
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	Day Check		21/7/11	
			Date	21/7/11

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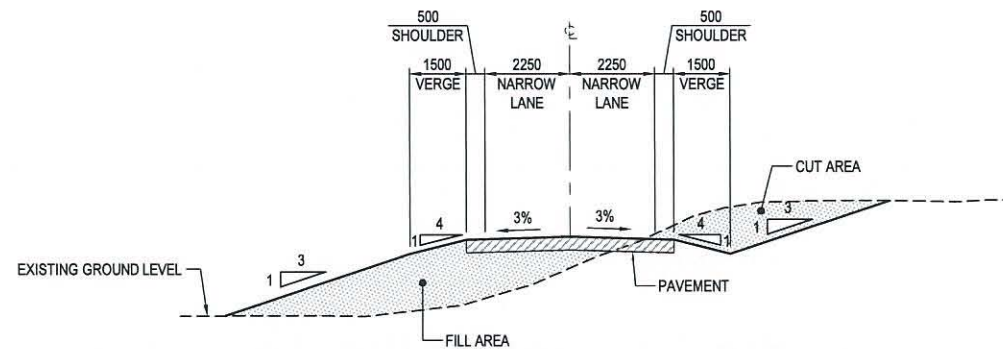
NZ TRANSPORT AGENCY WAIKAIRANGA

1 Mackays to Peka Peka

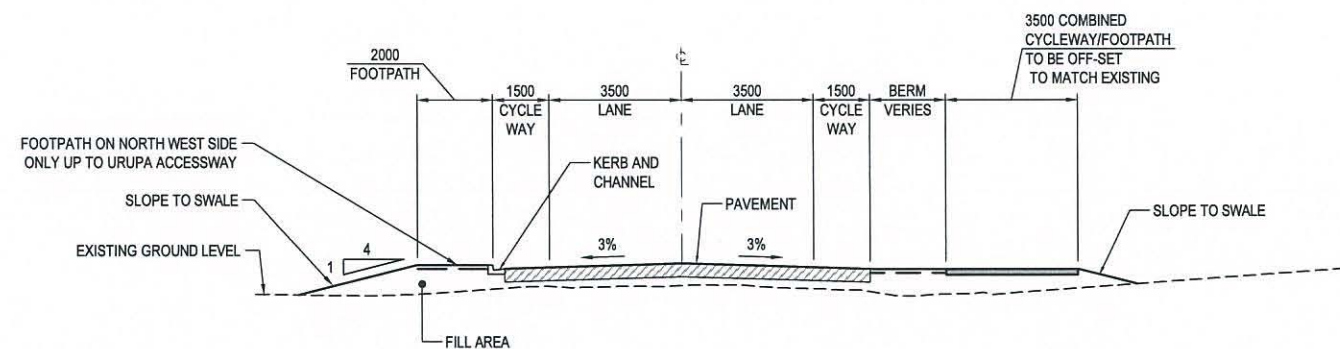
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Title: LOCAL ROADS
TYPICAL CROSS SECTION
SHEET 3 OF 7

Document Set:	M2PP-SAR-DWG
Drawing No:	CV-SC-022
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TYPICAL SECTION - EL RANCHO ACCESS ROAD AND URUPA ACCESS WAY
1:100



TYPICAL SECTION - TE MOANA INTERSECTION (TO BE CONTINUED ON APPROACHES)
LEVEL OF ROAD CLOSE TO EXISTING TO MINISE FILL
1:100

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No.	Revision	By	CHK	Appd	Date
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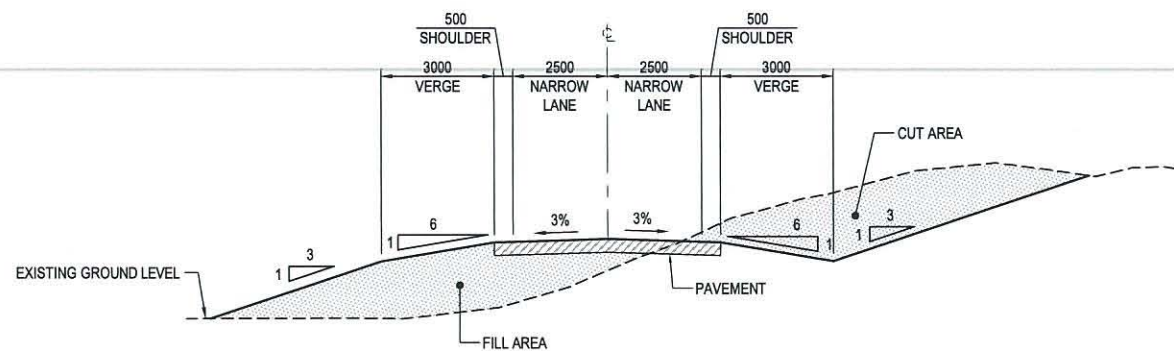
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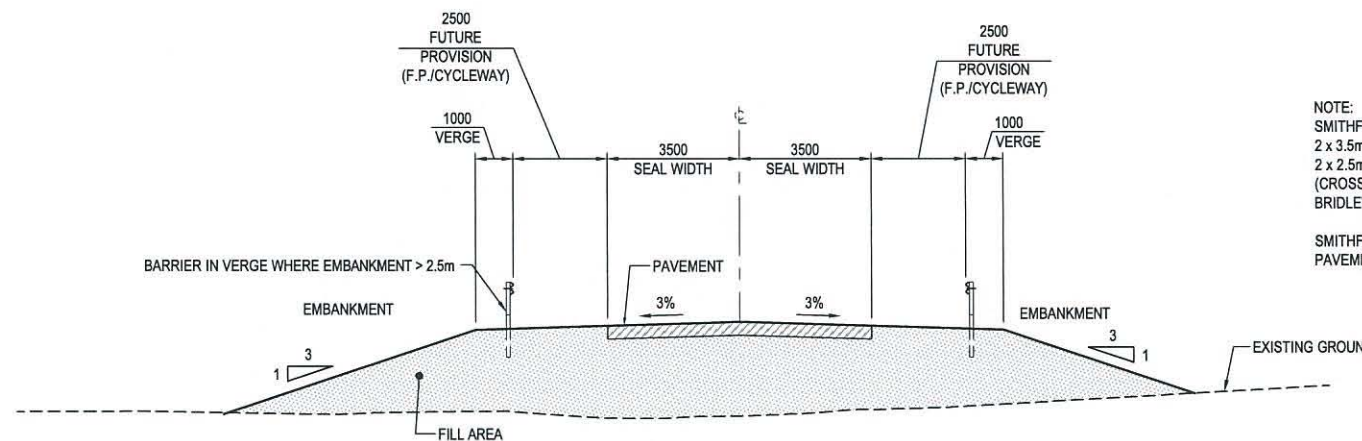
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Title:	LOCAL ROADS TYPICAL CROSS SECTION SHEET 4 OF 7
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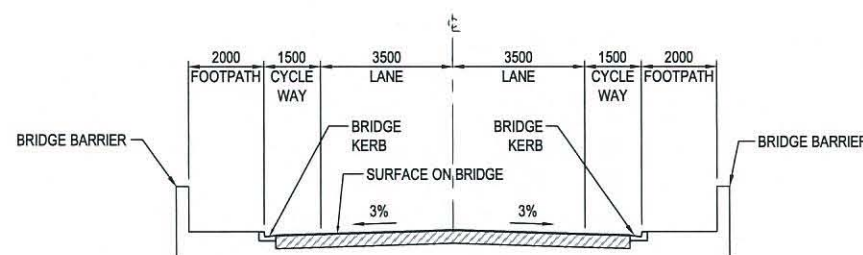
TYPICAL SECTION - NGARARA ROAD
1:100



NOTE:
SMITHFIELD CROSS SECTION TO PROVIDE 12m ROAD CORRIDOR.
2 x 3.5m LANES
2 x 2.5m SHARED CYCLE / PED
(CROSS SECTION MAY BE CONFIGURED DIFFERENTLY TO INCL. BRIDLEWAY).

SMITHFIELD EXTENSION SECTION MAY VARY BUT PAVEMENT WIDTH WOULD TYPICALLY NOT CHANGE.

TYPICAL SECTION - SMITHFIELD ROAD
1:100



TYPICAL SECTION - PEKA PEKA ROAD INTERSECTION OVER BRIDGE STRUCTURE
1:100

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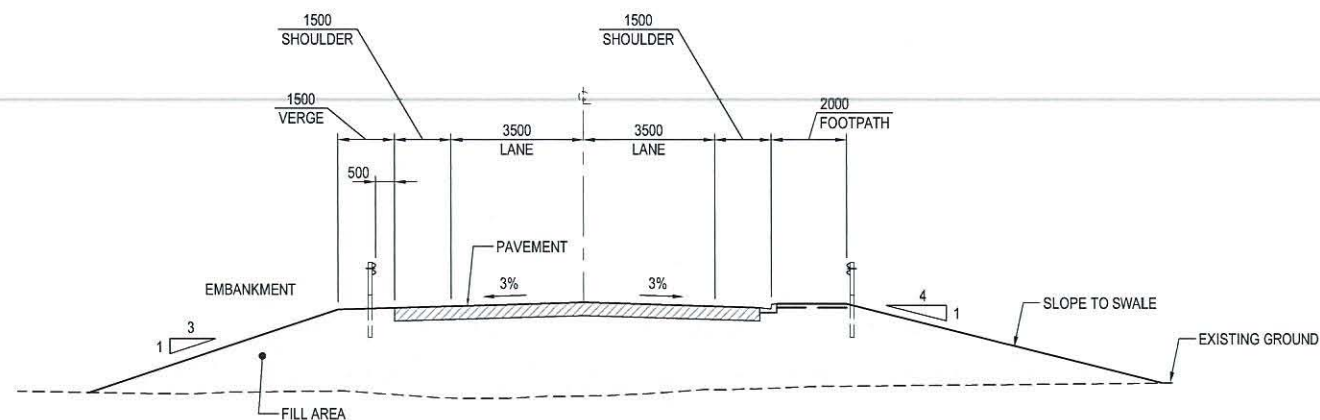
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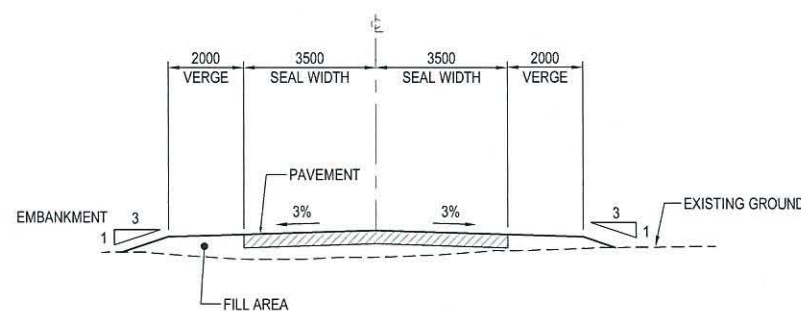
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SHEET 5 OF 7

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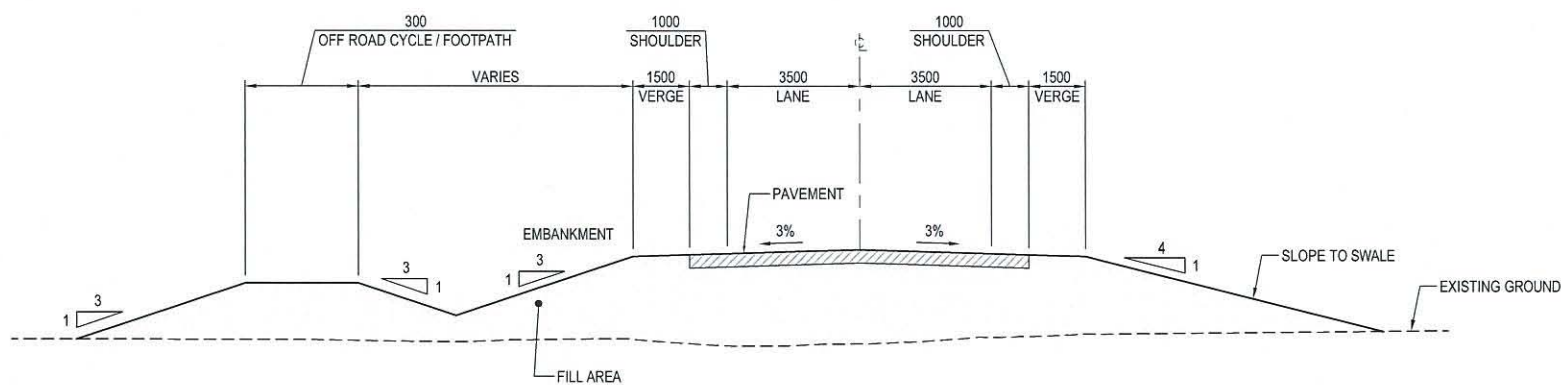


NOTE:
EMBANKMENT SLOPE LOCALLY STEEPENED TO
REDUCE FOOTPRINT.
BARRIER IN VERGE WHERE HEIGHT > 2.5

TYPICAL SECTION - PEKA PEKA ROAD, NORTHERN LINK ROAD AND SH1 LINK ROAD
1:100



TYPICAL SECTION - HADFIELD ROAD
1:100



TYPICAL SECTION - PEKA PEKA SERVICE ROAD
1:100

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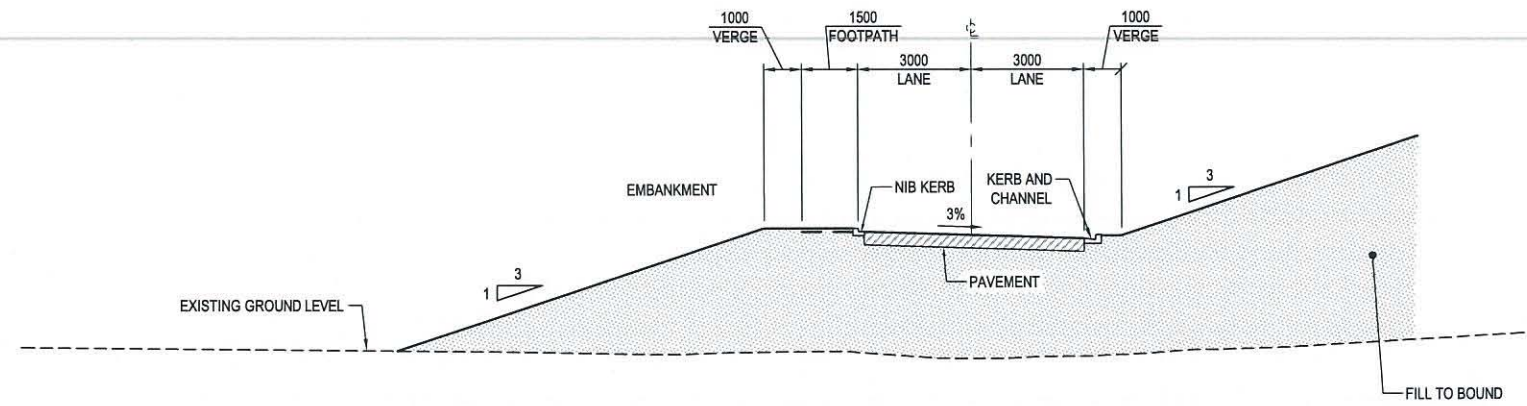
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	Dwg Check			



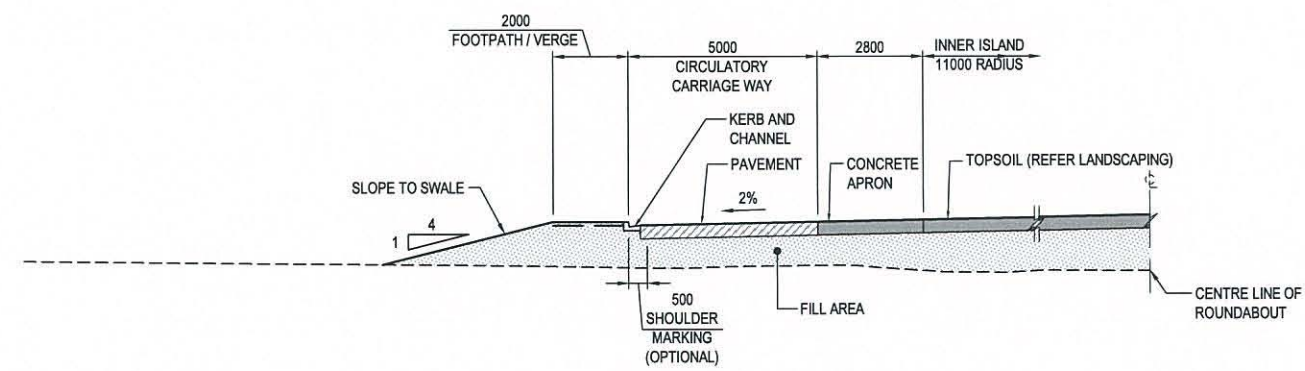
Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: LOCAL ROADS
TYPICAL CROSS SECTION
SHEET 6 OF 7

Document Set:	M2PP-SAR-DWG
Drawing No:	CV-SC-025
Rev:	A



TYPICAL SECTION - LEINSTER AVENUE
1:100



ROUNDBOUNT CARRIAGE WAY
1:100

FOR PRICING
NOT FOR CONSTRUCTION

No.	Revision	By	CHK	Appd	Date
A	FOR PRICING	JK	DGS	NRN	07.07.11

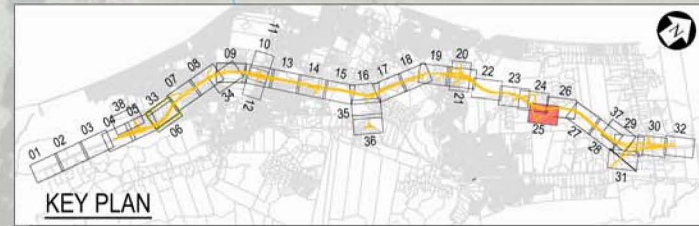
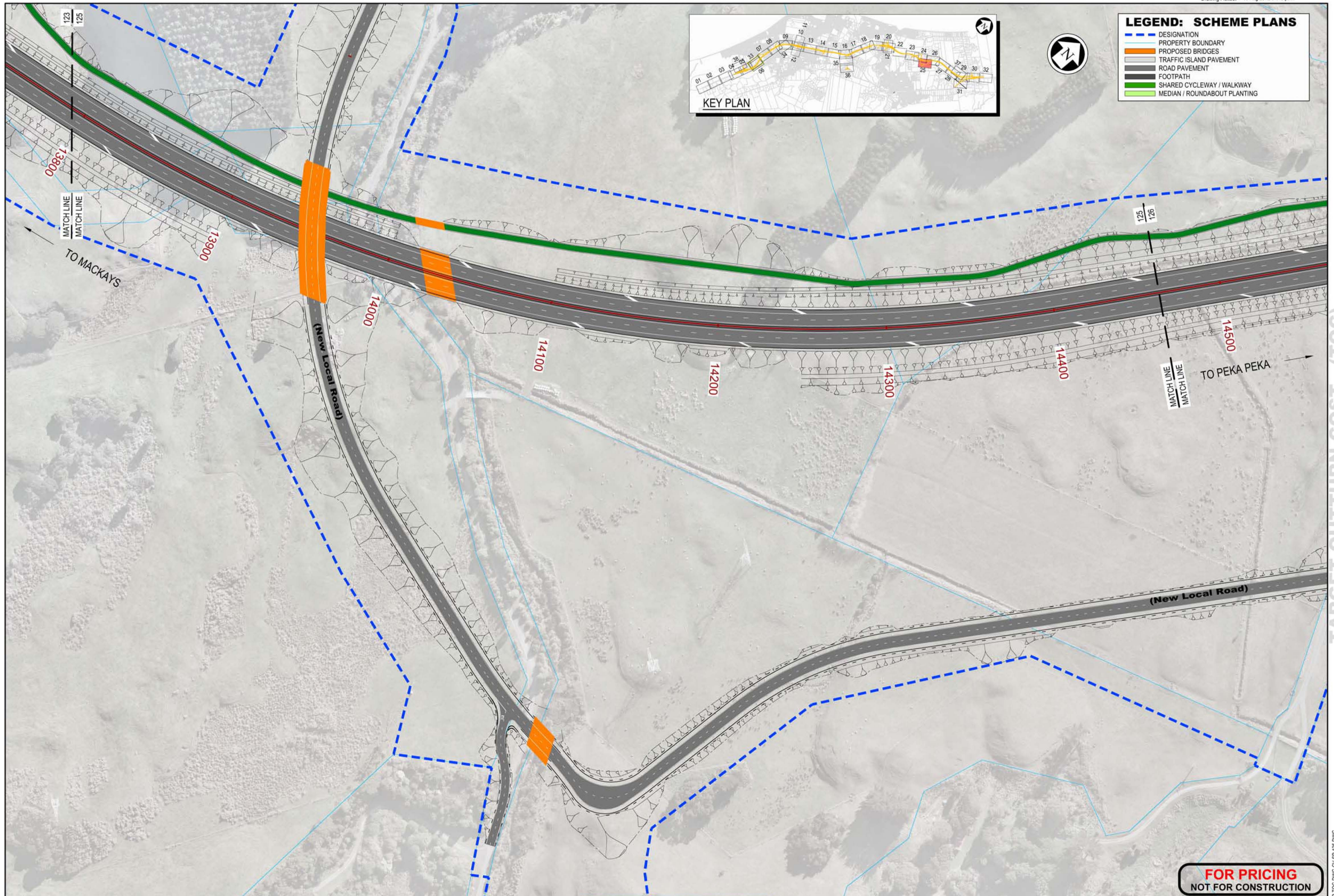
Original Scale (A1)	Design	PC	17.06.11	Approved For SAR
Reduced Scale (A3)	Drawn	JK	30.06.11	
	Dsg Verifier		21/7/11	
	Dwg Check		21/7/11	

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: LOCAL ROADS
TYPICAL CROSS SECTION
SHEET 7 OF 7

Document Set	M2PP-SAR-DWG
Drawing No.	CV-SC-026
Rev.	A

**ANNEXURE C – PLAN SHOWING THE ALTERNATIVE ACCESS
TO NGA MANU**



LEGEND: SCHEME PLANS

- DESIGNATION
- PROPERTY BOUNDARY
- PROPOSED BRIDGES
- TRAFFIC ISLAND PAVEMENT
- ROAD PAVEMENT
- FOOTPATH
- SHARED CYCLEWAY / WALKWAY
- MEDIAN / ROUNDABOUT PLANTING



FOR PRICING
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
1	FOR TOC PRICING	WRM	WGH	PB	14.08.12

Original Scale (A1)	1:1000
Reduced Scale (A3)	1:2000
Design	PC
Drawn	WRM
Drawn Verifier	DS
Drawn Check	WGH
Design	PC
Drawn	WRM
Drawn Verifier	DS
Drawn Check	WGH
Approved For TOC	P. BRADSHAW
Date	14.08.12

NZ TRANSPORT AGENCY
Mackays to Peka Peka

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: PROPOSED EXPRESSWAY SCHEME PLAN
SHEET 25 OF 37

Document Set	M2PP-TOC-DWG
Drawing No.	CV-SP-125
Rev.	1

TARGET OUTTURN COST (TOC)

Document No. M2PP-TOC-DWG-CV-SP-125.DWG

ANNEXURE D – LETTER TO WAIKANAE ON ONE



PO Box 8044
Wellington 6143
New Zealand
www.nzta.govt.nz/m2ppproject

Waikanae on One
C/O Sue Smith
462 Te Moana Road
Waikanae

22 August 2011

Dear Sue

We would like to thank you for Waikanae On One's submission (dated 23 June 2011), and particularly for the design concepts you have presented and your commitment to a good design outcome for the Expressway. We are also appreciative of the work that has gone into developing these ideas and the constructive way that you have engaged with us.

The M2PP Alliance acknowledges WOO's support for the expressway project as a whole and its desire to improve the overall amenity, stormwater and groundwater performance in the Waikanae area. We also acknowledge meetings held between the M2PP Alliance and WOO. These meetings took place on the following dates;

24 March 2011 at M2PP office

12 May 2011 at Sue Smith's residence, Waikanae

15 July 2011 at Sue Smith's residence, Waikanae

Discussions with members of the group have occurred at the public expos and also at the Waikanae design workshop held at El Rancho on Sunday 12 June 2011.

At our last meeting we said that we would respond to the matters you raised in your submission and at meetings and subsequent emails and provide comment on your design concepts. We will respond to the items using the same item number as in the WOO submission.

EXPRESSWAY ON EMBANKMENT

ITEMS 1 TO 7

The concerns expressed in the submission are that the proposed design by the Alliance of an embankment between the Waikanae River bridge and large dune just north of the urupa will exacerbate the current stormwater flooding and groundwater issues.

The Alliance has undertaken stormwater modelling to address these issues. This has included modelling of the Waikanae River to assess where breaches could occur and the flow rates and flow paths that would result. This recognises that there is an existing residual floodway route protected in the District Plan, and that this crosses Te Moana Road to reach Waimeha Stream – our design seeks to retain a similar residual flow path. The flood performance of the design is currently being discussed with both GWRC and KCDC engineering staff to confirm an approach to management of

the floodway that is acceptable to both. The design is intended to cater for a 100 year storm in both the Waikanae River and the Waimeha Stream, including Waikanae stopbank breach, with no increase in flood risk as a result of the expressway. Regarding groundwater, the Alliance has developed a 3-dimensional regional computer groundwater model and 3-dimensional area-specific model calibrated to existing conditions to check the effects of the proposed construction. The models consider the proposed stormwater devices and groundwater drains as well as the embankment construction methodology. Much of this section of the embankment will be constructed by excavating poorer draining materials from beneath the alignment and replacing these with sand to facilitate or improve groundwater flow characteristics. This means that the expressway embankment does not form a barrier to groundwater flow and is likely to improve flooding characteristics currently experienced by adjacent landowners.

Of concern to us is the suggested opportunity to direct the flood flow from the Waikanae River towards the Waimeha from a more downstream location, as this would involve creating an alternate breach point in the stopbank, and could significantly change the flood risk in the Waimeha. It would still be necessary to address the residual implication of a breach further upstream, which the WOO proposal does not. We also note that a further bridge (not labelled in the WOO proposal), would presumably be required where Te Moana Road crosses the proposed floodway route.

We also note in response to item 3 of your submission, the Alliance design takes into account climate change, including both increased rainfall intensity and sea level rise, in accordance with MfE and KCDC guidelines.

The WOO proposal to bridge from the Waikanae River bridge to the crescent dune just north of the urupa, would add significant cost (\$20-30 million).

TE MOANA ROAD INTERCHANGE

ITEMS 1 TO 5

The submission seeks to find a better interchange solution that reduces the adverse visual, noise and flooding impacts on the community. The alliance has gone through a very detailed optioneering process selecting the preferred option through a number of multi criteria assessment workshops attended by specialists in all design and environmental disciplines.

ITEM 1

The Alliance design considers storm events and has identified floodways. This has been done in consultation with GWRC and KCDC. As stated above, the floodway is a residual one (i.e. the risk has largely been addressed by GWRC river works, but the flood path has still been protected), and is an existing feature, not one created by the expressway. The expressway will not result in the connectivity of Te Moana Road being reduced due to flood risk, and the level of protection provided to Te Moana Road now and with the expressway exceeds the 100 year standard that would normally apply to major arterial roads.

Providing a local road that is above these storm events would require additional structures, again at an increased cost.

ITEMS 2 TO 5

The constraints that the Alliance has considered in selecting an alignment between Waikanae River and north of Te Moana Road include:

- . 110km design speed
- . Alignment passing between the Maketu tree and the urupa
- . Lessening impact on multiple Maori owned land
- . Minimising impact on houses
- . Minimising impact on archaeological areas north of Te Moana Road

These constraints make it impossible to shield the alignment with the large dune just north of the urupa. The Alliance proposes to provide a wide open area where the Expressway crosses Te Moana Road, this will be planted with exotic amenity trees to complement the extensive tree planting in the area that exists along Te Moana Road itself and in the adjoining private properties. This will also accommodate the flood way in the vicinity of the Expressway.

The submission from WOO proposes relocating Te Moana Road and constructs a road over the Expressway. This provides for a less direct route, together with providing a local road with gradients that do not assist cyclist, pedestrian and mobility scooter use. While this proposal provides a pedestrian and cyclist access under the Expressway at the current Te Moana Road location, this would be in the form of a lengthy underpass (30m) which is not in accordance with good CPTED principles.

The height of the Expressway over the proposed pedestrian underpass would need to be in the order of 4-5 metres, plus a concrete edge barrier of 1m, thus giving a total height of approximately 6 metres. The height of the Alliance design is approximately 8.5m. Both the Alliance proposal and the WOO proposal require the Expressway to be supported on large elevated structures and both proposals will have significant visual effects. Consequently, given the higher costs of the WOO proposal, which as noted, will also require the Expressway to be significantly elevated above the existing ground, the Alliance maintains that when all of the factors are taken into account the current proposal is the most viable option.

The total length of bridges associated with the Te Moana interchange and diverted Te Moana Road in the WOO submission is approximately 480 metres, plus a 500 metre land bridge, whereas the Alliance design currently has 220 metres of structure. This equates to an increased cost of approximately 6 million dollars for the WOO option.

In the vicinity of the proposed Te Moana Interchange, there are a number of properties that are defined as Multiple-owned Māori Land. These properties are in the ownership of many individuals, and acquiring such properties is usually quite problematic in terms of contacting and negotiating with property owners, and securing these types of title. Compared with other types of title, acquiring MOML often takes significantly longer.

We have also received a further design option from you on 16th July. This is a further refinement of the previous options provided and most of the comments above apply to this concept as well. This option does reduce the number of houses required and does take the interchange away from the Te Moana Road.

However, there are a number of issues that make this option less desirable as listed below:

- Creates an 'island' of properties on Te Moana Road
- Requires full purchase of multiple owned Māori Land
- Makes future connections north of Te Moana Road to Maypole Property more difficult
- Contains more structure than Alliance design, 400m against 220m increasing the cost significantly
- Will require large retaining walls to construct the interchange

We trust the response provided above indicates the seriousness with which the Alliance team has taken the WOO submission and adequately explains our reasoning.

Yours sincerely



Noel Nancekivell

Design Manager
M2PP Alliance

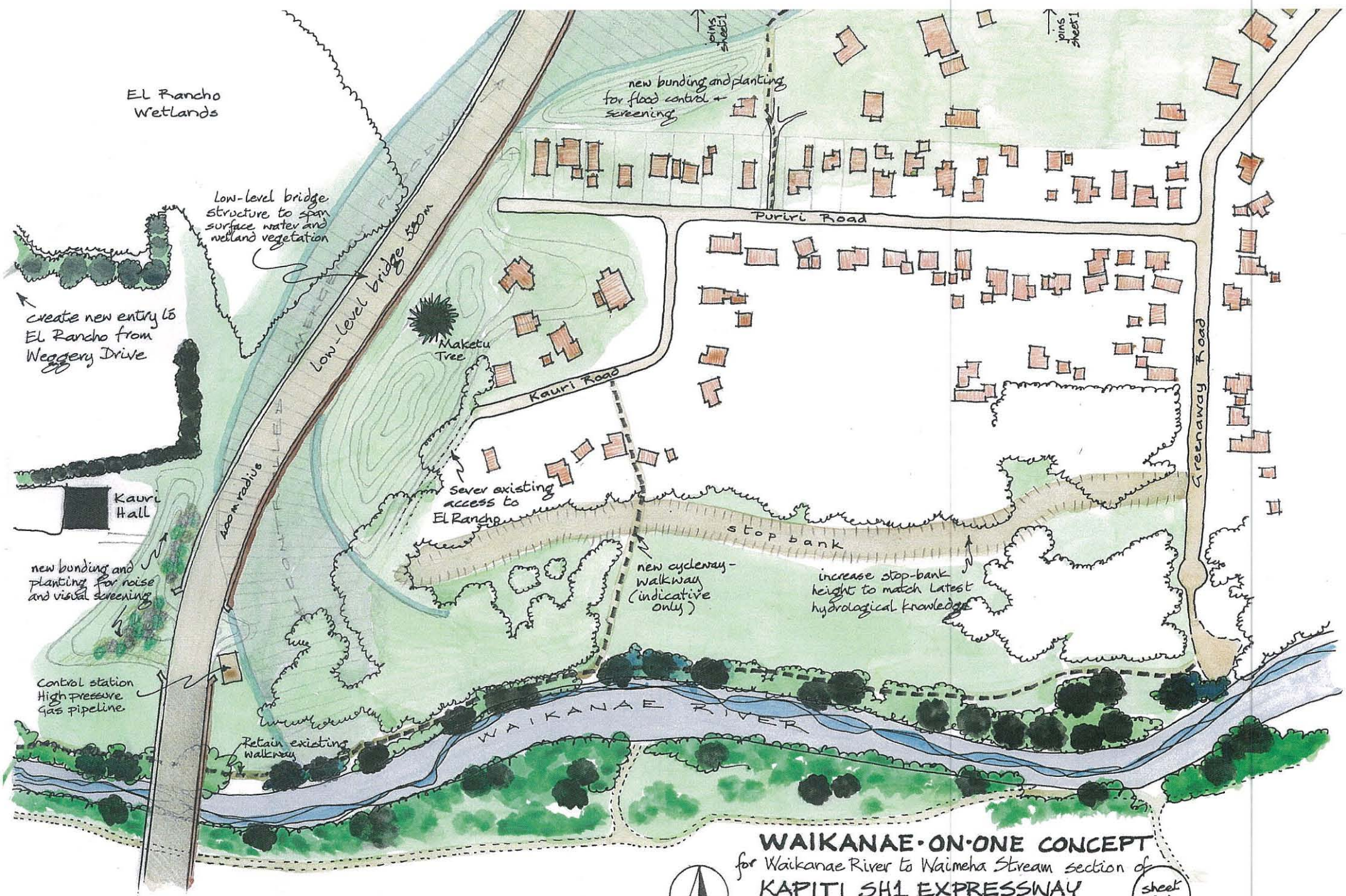


Jane Black

Stakeholder Manager
M2PP Alliance

CC: KCDC
Gael Ferguson

Encl: 2 concept plans

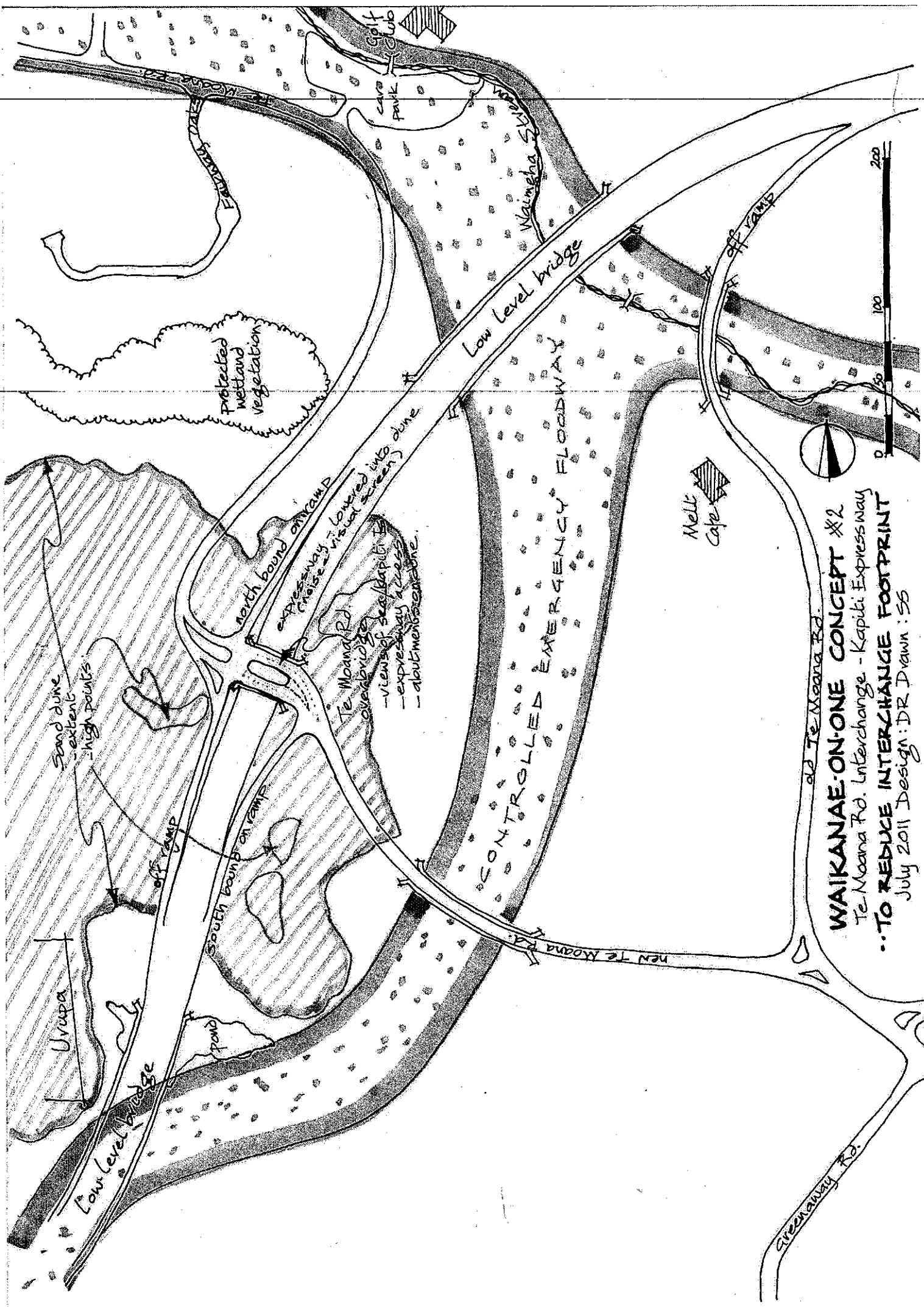


WAIKANAE-ON-ONE CONCEPT
 for Waikanae River to Waimeha Stream section of
KAPITI SH1 EXPRESSWAY

Drawn: June 2011: SS: Scale: approximate

sheet
2 of
2





WAIKANAË-ON-ONE CONCEPT #2
 Te Moana Rd. Interchange - Kapiti Expressway
..TO REDUCE INTERCHANGE FOOTPRINT
 July 2011 Design: DR Drawn: SB