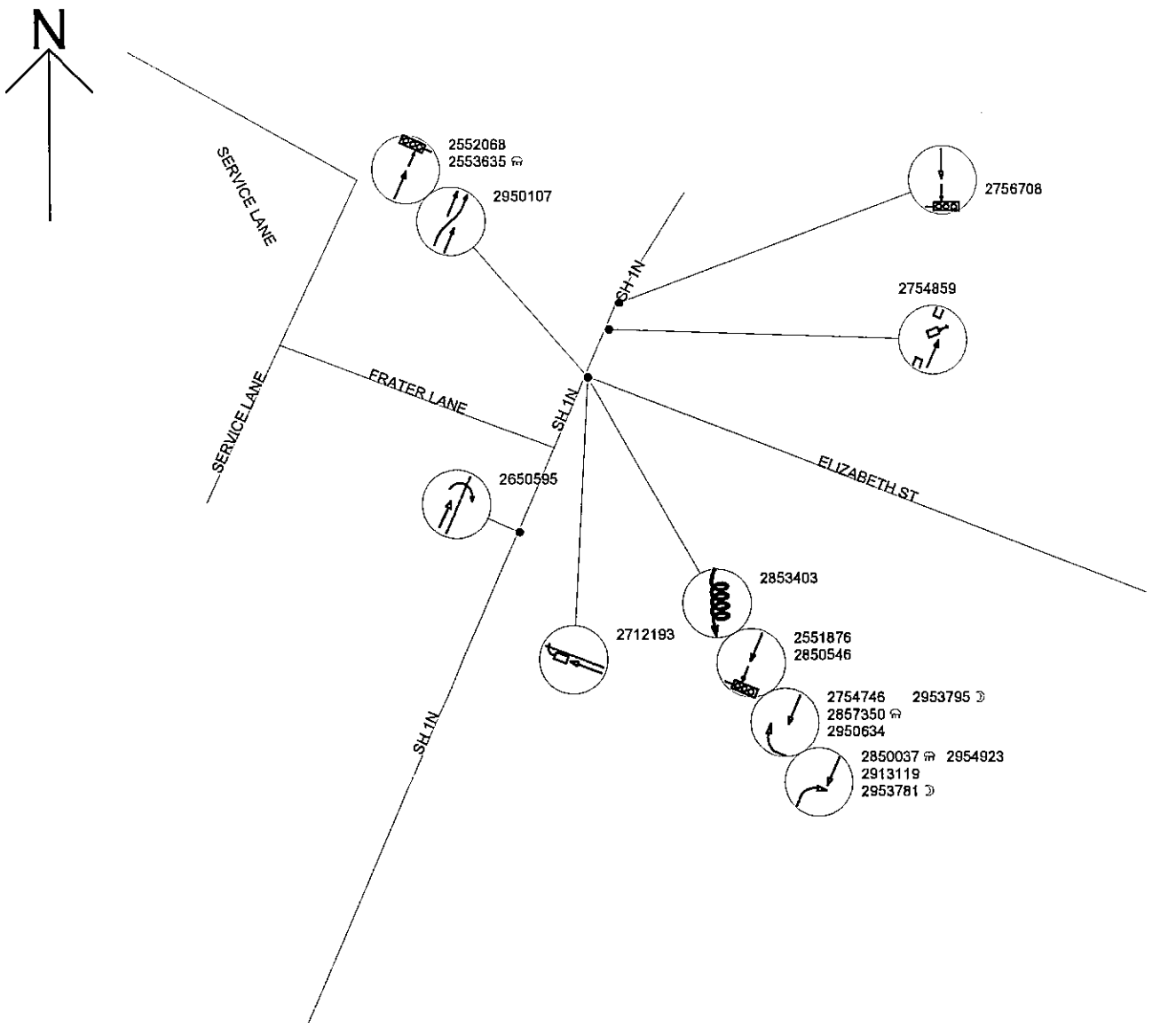
Appendix A

Intersection Crash Lists and Diagrams



SH1 Elizabeth Street
2005 - 2009
07 September 2010

0.025 0 0.025 0.05Km 0.075Km

NZ TRANSPORT AGENCY
WAKA KOTAHI

CRASH LIST DETAIL REPORT

Run on: 9 Sep 2010

Crash List: SH1 Elizabeth Street (19 crashes)

Total Injury Crashes:	2
Total Non-Injury Crashes:	17
	19

Crash Type	Number	%
Overtaking Crashes:	1	5
Straight Road Lost Control/Head On:	1	5
Bend - Lost Control/Head On:	0	0
Rear End/Obstruction:	9	47
Crossing/Turning:	8	42
Pedestrian Crashes:	0	0
Miscellaneous Crashes:	0	0
TOTAL:	19	100 %

Location	Local road	%	St.Highway	%	Total	%
Urban	1	5	18	95	19	100
Open road	0	0	0	0	0	0
TOTAL:	1	5	18	95	19	100 %

Intersection/Midblock	Number	%
Intersection:	16	84
MidBlock:	3	16
TOTAL:	19	100 %

Environmental Factors	Number	%
Light/Overcast Crashes:	17	89
Dark/Twilight Crashes:	2	11
TOTAL:	19	100 %
Wet/Ice:	3	16
Dry:	16	84
TOTAL:	19	100 %

Day/Period	Number	%
Weekday	13	68
Weekend	6	32
TOTAL:	19	100 %

Vehicles	Number	%
Car	27	89
Van/Ute	3	16
Truck	0	0
Bus	3	16
Motorcycle	1	5
Bicycle	0	0
TOTAL:	34	126 %

Note: Percentages represent the % of crashes in which the vehicle, cause or object appears.

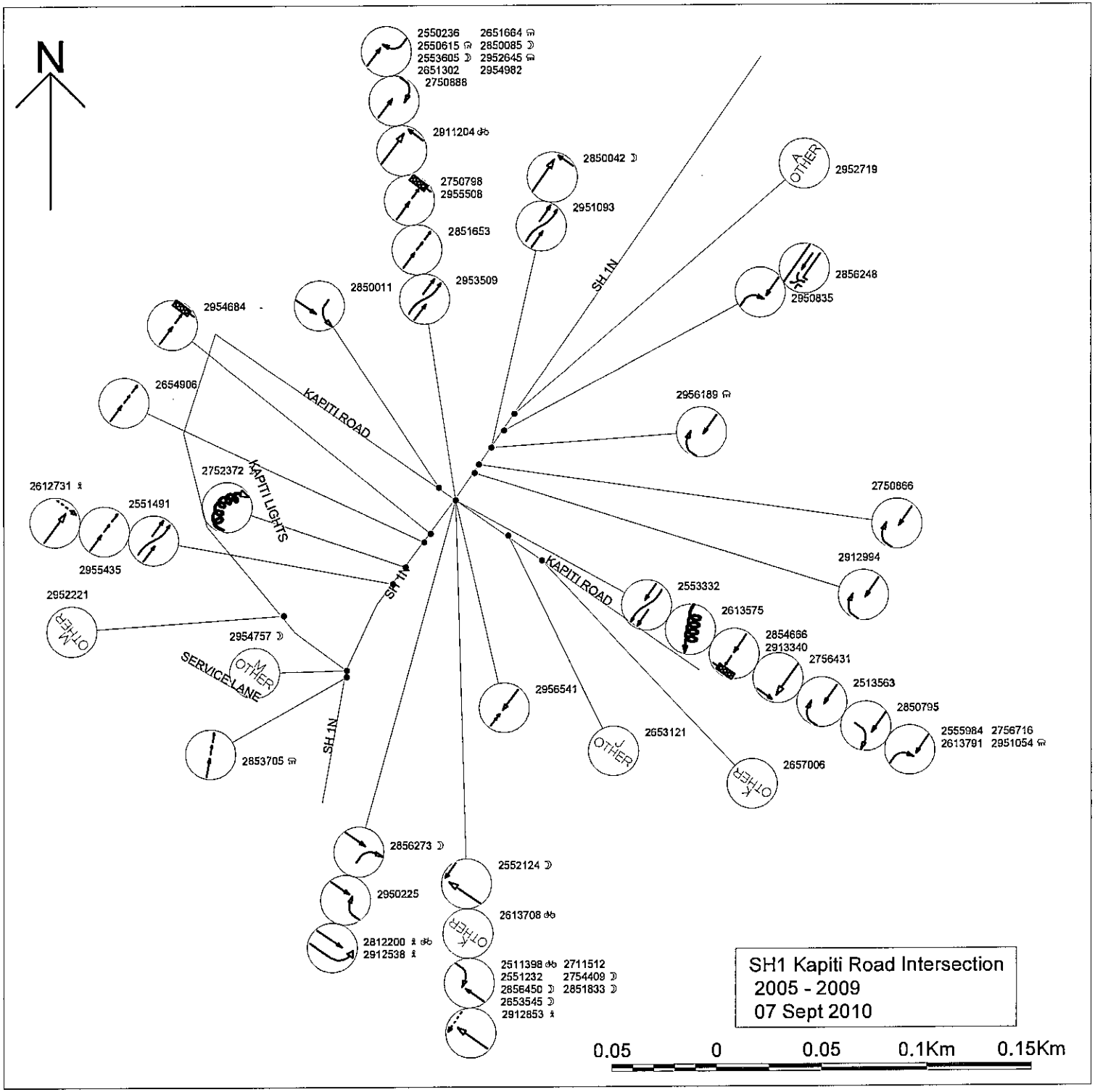
Driver/Vehicle factors	No.Inj.Crashes	% Inj.Crashes
Failed Giveway/Stop	1	50
Poor Observation	1	50
TOTAL:	2	100 %

Environmental factors	No.All Crashes	% All Crashes
No factors		
TOTAL:	0	0
Crashes with objects(s) struck	3	16 %

Object Struck	Number	%
Phone Box Etc.	1	5
Post Or Pole	1	5
Tree	1	5
TOTAL:	3	15 %

Crash Numbers

Year	Fatal	Serious	Minor	Non-Inj
2005	0	0	0	3
2006	0	0	0	1
2007	0	0	1	4
2008	0	0	0	4
2009	0	0	1	5
TOTAL:	0	0	2	17


N
2550236 2651664
2550615 2850085
2553605 2952645
2651302 2954982
2750888
2911204
2750798
2955508
2851653
2953509
2850011
2850042
2951093
SH 1N
OTHER
2952719
2856248
2950835
2954684
2654906
KAPITI ROAD
2956189
2752372
KAPITI LIGHTS
2612731
2551491
2955435
2750866
2912994
SH 1N
KAPITI ROAD
2553332
2613575
2854666
2913340
2756431
2513563
2850795
2555984 2756716
2613791 2951054
2952221
OTHER
2954757
OTHER
SERVICE LANE
SH 1N
2853705
2956541
OTHER
2653121
OTHER
2657006
2856273
2552124
2950225
2613708
OTHER
2812200
2912538
2511398 2711512
2551232 2754409
2856450 2851833
2653545
2912853
SH1 Kapiti Road Intersection
2005 - 2009
07 Sept 2010
0.05 0 0.05 0.1Km 0.15Km

NZ TRANSPORT AGENCY
WAKA KOTAHI

CRASH LIST DETAIL REPORT

Run on: 9 Sep 2010

Crash List: Sh1 Kapiti Road RevB (62 crashes)

Total Injury Crashes:	13
Total Non-Injury Crashes:	49
	62

Crash Type	Number	%
Overtaking Crashes:	5	8
Straight Road Lost Control/Head On:	2	3
Bend - Lost Control/Head On:	1	2
Rear End/Obstruction:	14	23
Crossing/Turning:	36	58
Pedestrian Crashes:	4	6
Miscellaneous Crashes:	0	0
TOTAL:	62	100 %

Location	Local road	%	St.Highway	%	Total	%
Urban	6	10	56	90	62	100
Open road	0	0	0	0	0	0
TOTAL:	6	10	56	90	62	100 %

Intersection/Midblock	Number	%
Intersection:	42	68
MidBlock:	20	32
TOTAL:	62	100 %

Environmental Factors	Number	%
Light/Overcast Crashes:	51	82
Dark/Twilight Crashes:	11	18
TOTAL:	62	100 %
Wet/Ice:	6	10
Dry:	56	90
TOTAL:	62	100 %

Day/Period	Number	%
Weekday	39	63
Weekend	23	37
TOTAL:	62	100 %

Vehicles	Number	%
Car	88	92
Van/Ute	13	18
Truck	8	13
Bus	3	5
Motorcycle	0	0
Bicycle	4	6
TOTAL:	116	134 %

Note: Percentages represent the % of crashes in which the vehicle, cause or object appears.

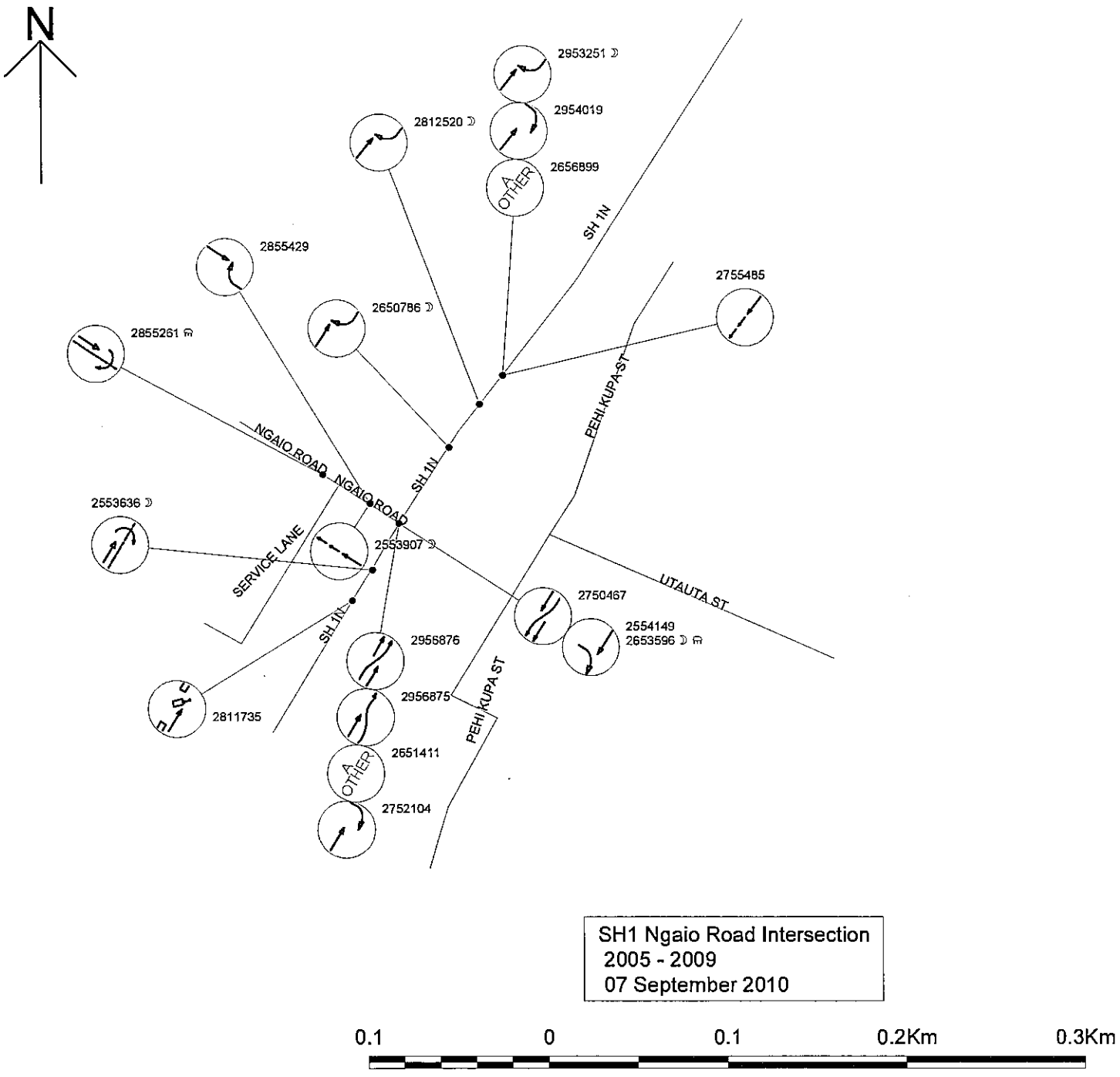
Driver/Vehicle factors	No.Inj.Crashes	% Inj.Crashes
Too fast	3	23
Failed Giveway/Stop	8	62
Failed Keep Left	1	8
Incorrect Lane/posn	1	8
Poor handling	1	8
Poor Observation	4	31
Pedestrian factors	3	23
Vehicle factors	1	8
TOTAL:	22	171 %

Environmental factors	No.All Crashes	% All Crashes
Road factors	1	2
TOTAL:	1	2 %
Crashes with objects(s) struck	5	8 %

Object Struck	Number	%
Fence	2	3
Traffic Island	1	2
Parked Vehicle	2	3
Post Or Pole	1	2
TOTAL:	6	10 %

Crash Numbers

Year	Fatal	Serious	Minor	Non-Inj
2005	0	0	2	8
2006	0	1	3	7
2007	0	0	1	7
2008	0	0	1	12
2009	0	0	5	15
TOTAL:	0	1	12	49


N
2953251
2954019
2812520
OTHER
2656899
SH 1N
2855429
2755485
2650786
2855261
NGAIO ROAD
NGAIO ROAD
SH 1N
PEHI KUPA ST
2553636
SERVICE LANE
2553907
UTAUTA ST
2750467
2554149
2653596
SH 1N
2956876
2956875
PEHI KUPA ST
2811735
2651411
OTHER
2752104
SH1 Ngaio Road Intersection
2005 - 2009
07 September 2010
0.1
0
0.1
0.2Km
0.3Km

NZ TRANSPORT AGENCY
WAKA KOTAHI

CRASH LIST DETAIL REPORT

Run on: 9 Sep 2010

Crash List: Sh1 Ngaio Road (19 crashes)

Total Injury Crashes:	2
Total Non-Injury Crashes:	17
	19

Crash Type	Number	%
Overtaking Crashes:	5	26
Straight Road Lost Control/Head On:	0	0
Bend - Lost Control/Head On:	0	0
Rear End/Obstruction:	6	32
Crossing/Turning:	8	42
Pedestrian Crashes:	0	0
Miscellaneous Crashes:	0	0
TOTAL:	19	100 %

Location	Local road	%	St.Highway	%	Total	%
Urban	4	21	15	79	19	100
Open road	0	0	0	0	0	0
TOTAL:	4	21	15	79	19	100 %

Intersection/Midblock	Number	%
Intersection:	7	37
MidBlock:	12	63
TOTAL:	19	100 %

Environmental Factors	Number	%
Light/Overcast Crashes:	12	63
Dark/Twilight Crashes:	7	37
TOTAL:	19	100 %
Wet/Ice:	3	16
Dry:	16	84
TOTAL:	19	100 %

Day/Period	Number	%
Weekday	13	68
Weekend	6	32
TOTAL:	19	100 %

Vehicles	Number	%
Car	29	100
Van/Ute	5	26
Truck	3	16
Bus	1	5
Motorcycle	0	0
Bicycle	0	0
TOTAL:	38	147 %

Note: Percentages represent the % of crashes in which the vehicle, cause or object appears.

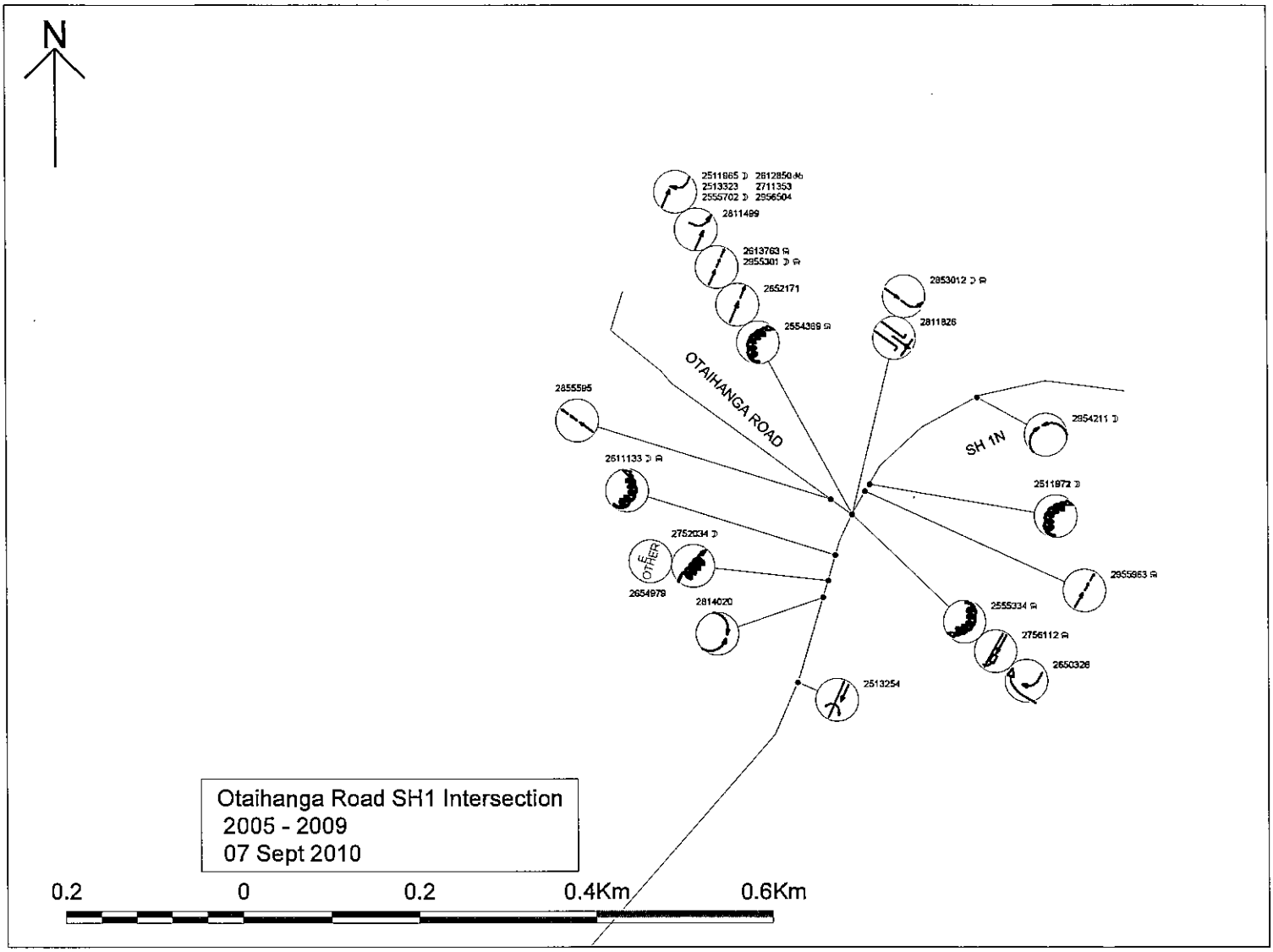
Driver/Vehicle factors	No.Inj.Crashes	% Inj.Crashes
Failed Giveway/Stop	1	50
Poor Observation	1	50
TOTAL:	2	100 %

Environmental factors	No.All Crashes	% All Crashes
Road factors	2	11
TOTAL:	2	11 %
Crashes with objects(s) struck	3	16 %

Object Struck	Number	%
Traffic Island	2	11
Parked Vehicle	1	5
TOTAL:	3	16 %

Crash Numbers

Year	Fatal	Serious	Minor	Non-Inj
2005	0	0	0	3
2006	0	0	0	4
2007	0	0	0	4
2008	0	0	2	2
2009	0	0	0	4
TOTAL:	0	0	2	17


N
2511865 D 2612850 D
2513323 2711353
2555702 D 2556504
2811499
2613763 R
2555301 D R
2652171
2554389 R
2853012 D R
2811826
OTAIHANGA ROAD
SH 1N
2555595
2611133 D R
2754211 D
2511872 D
2752034 D
OTHER
2654978
2814020
2555334 R
2756112 R
2650326
2955963 R
2513254
Otaihanga Road SH1 Intersection
2005 - 2009
07 Sept 2010
0.2
0
0.2
0.4Km
0.6Km

NZ TRANSPORT AGENCY
WAKA KOTAHI

CRASH LIST DETAIL REPORT

Run on: 9 Sep 2010

Crash List: SH1 Otaihanga Road (23 crashes)

Total Injury Crashes:	10
Total Non-Injury Crashes:	13
	23

Crash Type	Number	%
Overtaking Crashes:	0	0
Straight Road Lost Control/Head On:	1	4
Bend - Lost Control/Head On:	6	26
Rear End/Obstruction:	8	35
Crossing/Turning:	8	35
Pedestrian Crashes:	0	0
Miscellaneous Crashes:	0	0
TOTAL:	23	100 %

Location	Local road	%	St.Highway	%	Total	%
Urban	0	0	0	0	0	0
Open road	1	4	22	96	23	100
TOTAL:	1	4	22	96	23	100 %

Intersection/Midblock	Number	%
Intersection:	16	70
MidBlock:	7	30
TOTAL:	23	100 %

Environmental Factors	Number	%
Light/Overcast Crashes:	16	70
Dark/Twilight Crashes:	7	30
TOTAL:	23	100 %
Wet/Ice:	8	35
Dry:	15	65
TOTAL:	23	100 %

Day/Period	Number	%
Weekday	17	74
Weekend	6	26
TOTAL:	23	100 %

Vehicles	Number	%
Car	37	91
Van/Ute	4	17
Truck	0	0
Bus	0	0
Motorcycle	1	4
Bicycle	1	4
TOTAL:	43	116 %

Note: Percentages represent the % of crashes in which the vehicle, cause or object appears.

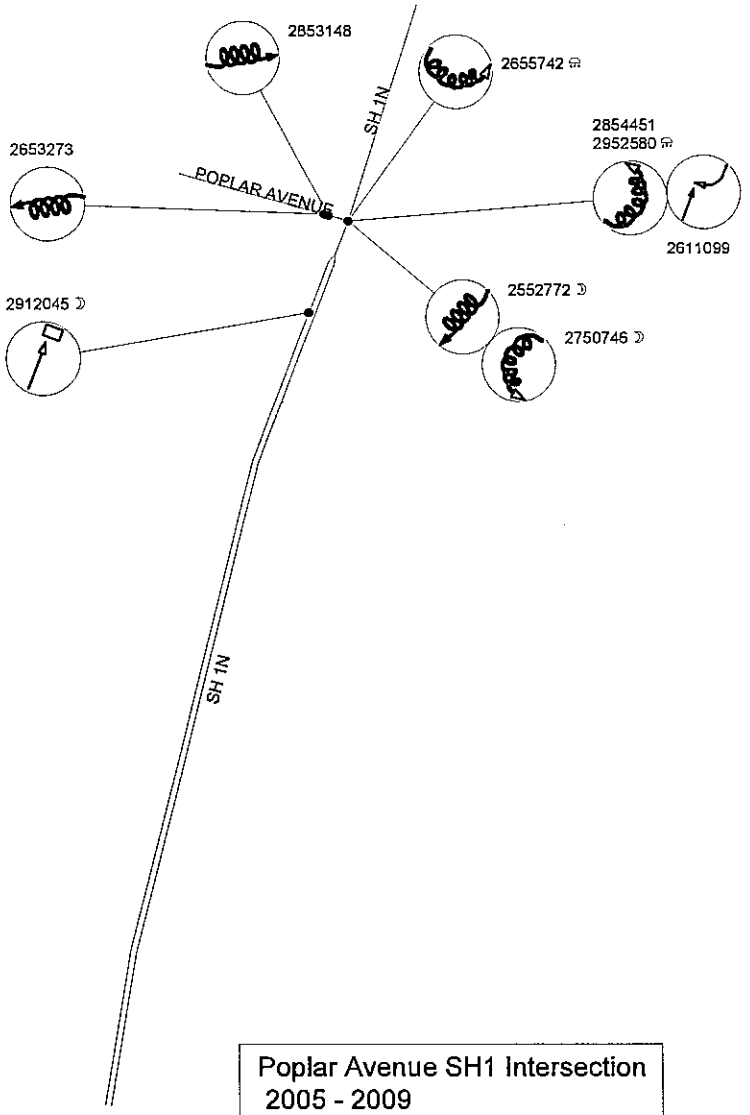
Driver/Vehicle factors	No.Inj.Crashes	% Inj.Crashes
Alcohol	1	10
Too fast	1	10
Failed Giveway/Stop	4	40
Failed Keep Left	1	10
Incorrect Lane/posn	1	10
Poor handling	2	20
Poor Observation	3	30
Poor judgement	1	10
Fatigue	1	10
Disabled/old/ill	1	10
TOTAL:	16	160 %

Environmental factors	No.All Crashes	% All Crashes
Road factors	4	17
TOTAL:	4	17 %
Crashes with objects(s) struck	8	35 %

Object Struck	Number	%
Cliff Bank	1	4
Over Bank	1	4
Fence	4	17
Traffic Island	1	4
Post Or Pole	1	4
Vehicle	1	4
Traffic Sign	1	4
Tree	1	4
TOTAL:	11	45 %

Crash Numbers

Year	Fatal	Serious	Minor	Non-Inj
2005	0	2	1	3
2006	0	0	3	3
2007	0	0	1	2
2008	0	2	1	2
2009	0	0	0	3
TOTAL:	0	4	6	13



Poplar Avenue SH1 Intersection
2005 - 2009
07 Sept 2010

0.25 0 0.25 0.5Km 0.75Km

NZ TRANSPORT AGENCY
WAKA KOTAHI

CRASH LIST DETAIL REPORT

Run on: 9 Sep 2010

Crash List: SH1 Poplar Avenue (9 crashes)

Total Injury Crashes:	2
Total Non-Injury Crashes:	7
	9

Crash Type	Number	%
Overtaking Crashes:	0	0
Straight Road Lost Control/Head On:	3	33
Bend - Lost Control/Head On:	4	44
Rear End/Obstruction:	1	11
Crossing/Turning:	1	11
Pedestrian Crashes:	0	0
Miscellaneous Crashes:	0	0
TOTAL:	9	100 %

Location	Local road	%	St.Highway	%	Total	%
Urban	0	0	0	0	0	0
Open road	2	22	7	78	9	100
TOTAL:	2	22	7	78	9	100 %

Intersection/Midblock	Number	%
Intersection:	6	67
MidBlock:	3	33
TOTAL:	9	100 %

Environmental Factors	Number	%
Light/Overcast Crashes:	6	67
Dark/Twilight Crashes:	3	33
TOTAL:	9	100 %
Wet/Ice:	2	22
Dry:	7	78
TOTAL:	9	100 %

Day/Period	Number	%
Weekday	5	56
Weekend	4	44
TOTAL:	9	100 %

Vehicles	Number	%
Car	9	89
Van/Ute	0	0
Truck	2	11
Bus	0	0
Motorcycle	0	0
Bicycle	0	0
TOTAL:	11	100 %

Note: Percentages represent the % of crashes in which the vehicle, cause or object appears.

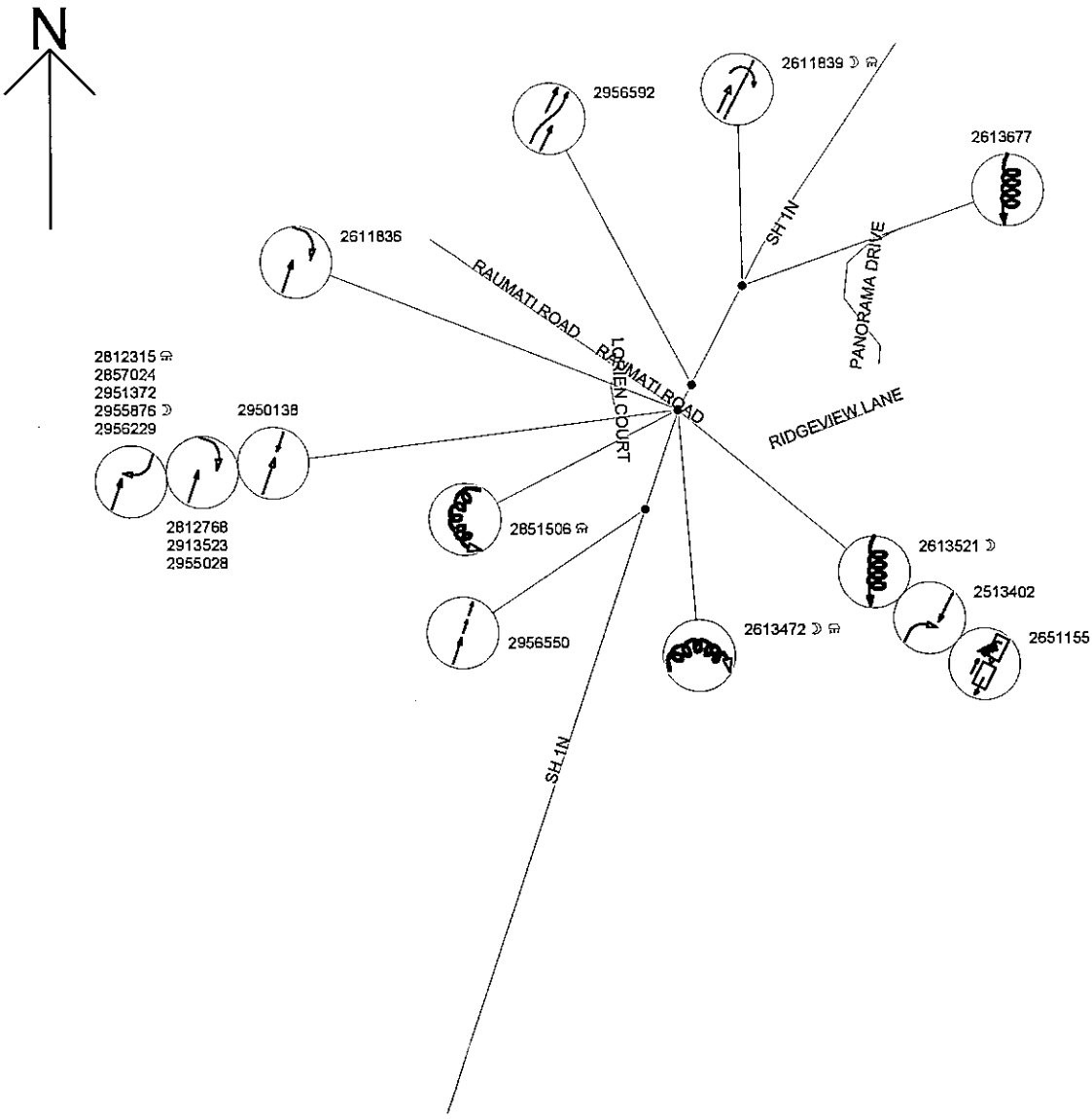
Driver/Vehicle factors	No.Inj.Crashes	% Inj.Crashes
Failed Giveway/Stop	1	50
Poor Observation	2	100
Disabled/old/ill	1	50
TOTAL:	4	200 %

Environmental factors	No.All Crashes	% All Crashes
Road factors	2	22
Weather	1	11
TOTAL:	3	33 %
Crashes with objects(s) struck	8	89 %

Object Struck	Number	%
Fence	1	11
Guard Rail	1	11
Traffic Island	1	11
Post Or Pole	1	11
Vehicle	1	11
Traffic Sign	1	11
Tree	2	22
Ditch	3	33
TOTAL:	11	121 %

Crash Numbers

Year	Fatal	Serious	Minor	Non-Inj
2005	0	0	0	1
2006	0	1	0	2
2007	0	0	0	1
2008	0	0	0	2
2009	0	0	1	1
TOTAL:	0	1	1	7



SH1 Raumati Road Intersection
2005 - 2009
07 Sept 2010

0.2 0 0.2 0.4Km 0.6Km

NZ TRANSPORT AGENCY
WAKA KOTAHI

CRASH LIST DETAIL REPORT

Run on: 9 Sep 2010

Crash List: Sh1 Raumati Road Rev A (19 crashes)

Total Injury Crashes:	9
Total Non-Injury Crashes:	10
	19

Crash Type	Number	%
Overtaking Crashes:	1	5
Straight Road Lost Control/Head On:	3	16
Bend - Lost Control/Head On:	2	11
Rear End/Obstruction:	2	11
Crossing/Turning:	10	53
Pedestrian Crashes:	0	0
Miscellaneous Crashes:	1	5
TOTAL:	19	100 %

Location	Local road	%	St.Highway	%	Total	%
Urban	0	0	1	5	1	5
Open road	0	0	18	95	18	95
TOTAL:	0	0	19	100	19	100 %

Intersection/Midblock	Number	%
Intersection:	15	79
MidBlock:	4	21
TOTAL:	19	100 %

Environmental Factors	Number	%
Light/Overcast Crashes:	15	79
Dark/Twilight Crashes:	4	21
TOTAL:	19	100 %
Wet/Ice:	4	21
Dry:	15	79
TOTAL:	19	100 %

Day/Period	Number	%
Weekday	14	74
Weekend	5	26
TOTAL:	19	100 %

Vehicles	Number	%
Car	27	89
Van/Ute	4	21
Truck	1	5
Bus	1	5
Motorcycle	1	5
Bicycle	0	0
TOTAL:	34	125 %

Driver/Vehicle factors	No.Inj.Crashes	% Inj.Crashes
Alcohol	1	11
Failed Giveway/Stop	6	67
Poor handling	1	11
Poor Observation	2	22
Poor judgement	1	11
Fatigue	2	22
TOTAL:	13	144 %

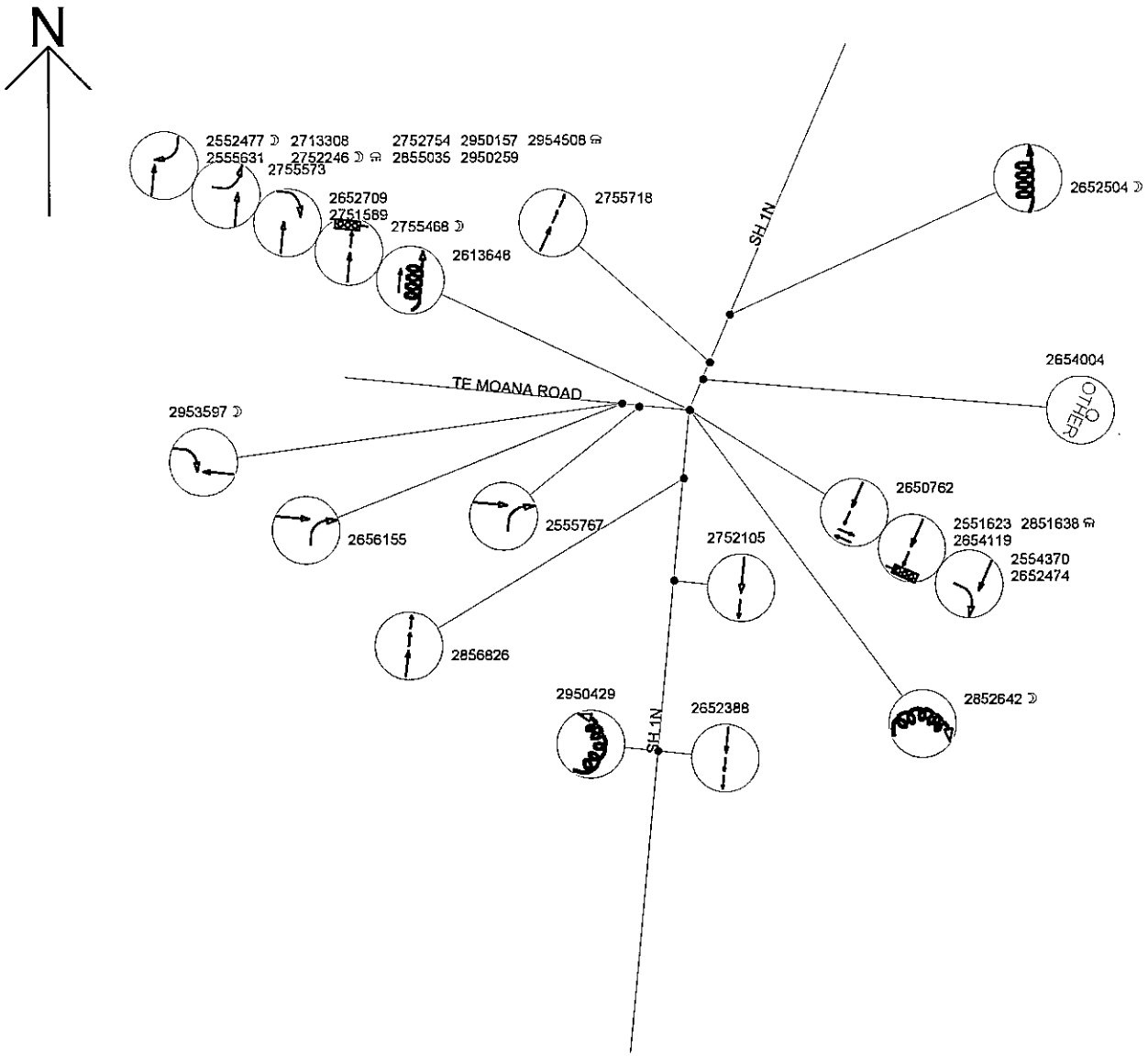
Environmental factors	No.All Crashes	% All Crashes
Road factors	1	5
TOTAL:	1	5 %
Crashes with objects(s) struck	3	16 %

Object Struck	Number	%
Over Bank	1	5
Fence	1	5
Traffic Island	1	5
Traffic Sign	1	5
Tree	1	5
TOTAL:	5	25 %

Crash Numbers

Year	Fatal	Serious	Minor	Non-Inj
2005	0	1	0	0
2006	0	1	4	1
2008	0	0	2	2
2009	0	0	1	7
TOTAL:	0	2	7	10

Note: Percentages represent the % of crashes in which the vehicle, cause or object appears.



SH1 Te Moana Road
2005 - 2009
07 September 2010

0.05 0 0.05 0.1Km 0.15Km

NZ TRANSPORT AGENCY
WAKA KOTAHI

CRASH LIST DETAIL REPORT

Run on: 9 Sep 2010

Crash List: SH1 Te Moana Road RevB (31 crashes)

Total Injury Crashes:	2
Total Non-Injury Crashes:	29
	31

Crash Type	Number	%
Overtaking Crashes:	1	3
Straight Road Lost Control/Head On:	1	3
Bend - Lost Control/Head On:	2	6
Rear End/Obstruction:	9	29
Crossing/Turning:	17	55
Pedestrian Crashes:	0	0
Miscellaneous Crashes:	1	3
TOTAL:	31	100 %

Location	Local road	%	St.Highway	%	Total	%
Urban	3	10	28	90	31	100
Open road	0	0	0	0	0	0
TOTAL:	3	10	28	90	31	100 %

Intersection/Midblock	Number	%
Intersection:	22	71
MidBlock:	9	29
TOTAL:	31	100 %

Environmental Factors	Number	%
Light/Overcast Crashes:	25	81
Dark/Twilight Crashes:	6	19
TOTAL:	31	100 %
Wet/Ice:	3	10
Dry:	28	90
TOTAL:	31	100 %

Day/Period	Number	%
Weekday	23	74
Weekend	8	26
TOTAL:	31	100 %

Vehicles	Number	%
Car	49	90
Van/Ute	3	10
Truck	4	13
Bus	0	0
Motorcycle	1	3
Bicycle	0	0
TOTAL:	57	116 %

Note: Percentages represent the % of crashes in which the vehicle, cause or object appears.

Driver/Vehicle factors	No.Inj.Crashes	% Inj.Crashes
Failed Giveway/Stop	1	50
Overtaking	1	50
Poor judgement	1	50
TOTAL:	3	150 %

Environmental factors	No.All Crashes	% All Crashes
Road factors	1	3
Weather	1	3
TOTAL:	2	6 %
Crashes with objects(s) struck	5	16 %

Object Struck	Number	%
Traffic Island	1	3
Parked Vehicle	2	6
Traffic Sign	1	3
Tree	2	6
Other	1	3
TOTAL:	7	21 %

Crash Numbers

Year	Fatal	Serious	Minor	Non-Inj
2005	0	0	0	5
2006	0	0	1	8
2007	0	0	1	7
2008	0	0	0	4
2009	0	0	0	5
TOTAL:	0	0	2	29

First Street	Distance	D I R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	MV T	DVVV 1 234	Factors and Roles (A is for vehicle 1, B is for veh 2 etc)	OBJECT	CURVE	WET	LIGHT	WEATHER	JUNCTION	CONTROL	MARKING	SPD LIMIT	Total Inj FAT	SER	MIN	PE age	CY age
1N/995/15.877	200	N	PEKA PEKA ROAD	2953145	12/06/2D09	Fri	1200	CB	CS1	130A 358A	V	R	D	O	F		N	L	100					
1N/995/15.877	200	N	PEKA PEKA ROAD	2752456	5/04/2007	Thu	1600	AA	CN1C	372A	F	R	D	O	F		N	L	100					
1N/995/15.977	100	N	PEKA PEKA ROAD	2912211	9/06/2009	Tue	636	BA	VS1CC	154A		R	D	DN	F		N	C	100		1	1		
1N/995/16.041		I	HADFIELD ROAD	2710006	16/01/2007	Tue	1620	LB	4S1CO	303B 532B	M	R	D	B	F	T	G	P	100	1		1		
1N/1012/0		I	PEKA PEKA ROAD	2755546	12/09/2007	Wed	1643	AC	CN1C	159A 173A		R	D	O	F	X	N	P	100					
1N/1012/0.05	50	S	PEKA PEKA ROAD	2750995	14/03/2007	Wed	1505	BE	TS1C	136A 669A		R	W	O	H		N	C	100					
1N/1012/0.1	100	S	PEKA PEKA ROAD	2851464	13/03/2008	Thu	640	BA	TS1TC	125A 358A 410A		R	D	DO	F		N	L	100					
1N/1012/0.2	200	S	PEKA PEKA ROAD	2951511	15/03/2009	Sun	415	FA	CS1V	181A 191B 817		R	D	DN	F		N	C	100					
1N/1012/1	1000	S	PEKA PEKA ROAD	2650599	3/03/2006	Fri	2216	DB	CS1	103A 131A	V	E	W	DN	H		N	C	100					
1N/1012/1	1000	S	PEKA PEKA ROAD	2951639	25/03/2009	Wed	1840	FA	CN1V	181A 817		R	D	TN	F		N	C	100					
1N/1012/1.17	1170	S	PEKA PEKA ROAD	2711708	8/03/2007	Thu	1409	CA	CS1	103A 130A	CT	R	D	B	F		N	C	100			1		
1N/1012/1.218	1100	N	GREENHILL ROAD	2512116	12/05/2005	Thu	1559	BF	VN1C	686A 687A	V	E	D	B	F		N	C	100			1		
1N/1012/1.28	1280	S	PEKA PEKA ROAD	2813889	24/11/2008	Mon	1105	CB	CN1	130A	F	R	W	O	F		N	C	100			1		
1N/1012/1.36	1360	S	PEKA PEKA ROAD	2512936	21/07/2005	Thu	2200	DA	CS1	111A 514A		E	D	DN	F		N	C	100			1		
1N/1012/1.38	1380	S	PEKA PEKA ROAD	2812552	3/08/2008	Sun	641	DB	CN1	134A 524A	V	E	W	DN	H		N	C	100			1		
1N/1012/1.456	3000	N	NGAIO ROAD	2812915	13/08/2008	Wed	717	FD	4S144	112A 132A 135A 801 823		R	W	O	L		N	L	100			1		
1N/1012/1.498	820	N	GREENHILL ROAD	2812201	21/05/2008	Wed	2100	CC	4N1	129A 134A 407A	V	R	D	DN	FS		N	L	100			1		
1N/1012/1.5	1500	S	PEKA PEKA ROAD	2552885	19/04/2005	Tue	645	AB	CN1V	152A		R	D	TN	P		N	C	100					
1N/1012/1.5	1500	S	PEKA PEKA ROAD	2750696	18/02/2007	Sun	615	DA	CS1	412A	S	E	D	DN	F		N	C	100					
1N/1012/1.5	1500	S	PEKA PEKA ROAD	2711090	10/02/2007	Sat	1628	AA	SS1C	198A 350A		E	D	B	F		N	C	100		1	2		57
1N/1012/1.518	800	N	GREENHILL ROAD	2953475	3/07/2009	Fri	1310	CB	CN1	423A 501A	V	R	D	B	F		N	C	100					
1N/1012/1.518	800	N	GREENHILL ROAD	2752770	26/05/2007	Sat	944	DA	CS1	134A 332A 359A	F	M	D	O	F		N	C	100					
1N/1012/1.868	450	N	GREENHILL ROAD	2813598	25/11/2008	Tue	602	QF	VS1C	660A 137B	FT	R	W	O	L		N	C	100			1		
1N/1012/1.918	400	N	GREENHILL ROAD	2913339	21/11/2009	Sat	1629	CB	MN1	112A 191A 402A 817	ET	R	W	O	F		N	C	100			1		
1N/1012/10.023	600	N	RUAHINE ST	2552336	28/04/2005	Thu	21	CC	TS1	112A 330A 410A 817	G	R	D	DO	F		N	C	80					
1N/1012/10.313	110	N	NIKAU PALM ON SBD	2654989	23/10/2006	Mon	1750	CB	CS1	137A 410A	P	R	W	O	L		N	R	80					
NIKAU PALM ON SBD	40	N	SH 1N	2753929	19/07/2007	Thu	1620	DB	CS1	111A	CFV	M	D	O	F		N	N	50					
1N/1012/10.473	150	N	RUAHINE ST	2555443	7/11/2005	Mon	325	EO	TS1	198A 817	G	R	D	DO	F		N	N	70					
1N/1012/10.623		I	RUAHINE ST	2911273	26/02/2009	Thu	1927	DA	CN2C	302A 386A	H	E	D	TF	F	Y	G	C	50			3		
RUAHINE ST		I	1N/1012/10.623	2754964	2/09/2007	Sun	755	MC	CS24	372B	S	R	D	B	F	Y	S	R	50					
1N/1012/10.665	400	S	NIKAU PALM ROAD	2812013	6/05/2008	Tue	1118	FD	CS1C	331A 350A		R	D	B	F		N	L	50			1		
1N/1012/10.816	100	E	BUCKLEY GROVE	2613122	17/10/2006	Tue	1930	BF	CW1TC	103A		E	D	TO	F		N	L	50			2		
1N/1012/10.834		I	RIMUTAKA ST	2651855	4/05/2006	Thu	1254	GD	VW1C	333A 350A		E	D	O	F	T	G	C	50					
RIMUTAKA ST		I	1N/1012/10.834	2851108	29/03/2008	Sat	2145	GD	TN1T	331A		E	W	DO	L	Y	N	C	50					
1N/1012/10.866	50	E	BUCKLEY GROVE	2611526	22/03/2006	Wed	1745	FD	TE1C	331A 353A		R	D	O	F		N	C	50			2		
1N/1012/10.874	40	N	RIMUTAKA ST	2753292	5/06/2007	Tue	1102	BF	CN1C	501A 197B		E	D	B	F		N	C	50					
1N/1012/10.884	50	W	RIMUTAKA ST	2856821	12/12/2008	Fri	1820	FD	4E1CC	331A 358A		E	D	O	F		N	C	50					
1N/1012/10.916		I	BUCKLEY GROVE	2651369	10/04/2006	Mon	1755	GD	CW1C	112A 331A		R	D	TF	F	T	G	C	50					
1N/1012/10.934	10	E	HINEMOA ST	2850035	12/01/2008	Sat	1200	BC	TE1C	121A		M	D	B	F	T	N	C	50					
1N/1012/10.936	20	W	BUCKLEY GROVE	2551766	10/04/2005	Sun	1310	FD	VE1C	181A 651B		E	W	DO	F		N	L	50					
1N/1012/10.944		I	HINEMOA ST	2713589	2/11/2007	Fri	1157	FD	CS1V	181A		R	D	B	F	X	N	C	50			1		
1N/1012/2	2000	S	PEKA PEKA ROAD	2712827	20/07/2007	Fri	1630	CB	CN1	410A	CF	R	D	O	F		N	C	100		1	3		
1N/1012/2.018	300	N	GREENHILL ROAD	2712703	20/07/2007	Fri	1733	FD	CS1C	117A 331A	V	R	D	TO	F		N	C	100			1		
1N/1012/2.068	250	N	GREENHILL ROAD	2750536	10/02/2007	Sat	1630	FD	VN1CV4	112A 181A 132B		R	D	B	F		N	C	100					
1N/1012/2.118	200	N	GREENHILL ROAD	2956883	25/12/2009	Fri	1649	FA	4N1C	181A 817		R	D	B	F		N	C	100					
1N/1012/2.31	1500	N	HEMI ST	2556828	19/12/2005	Mon	1300	CB	TN1	132A 181A	FTV	R	D	B	F		N	L	100					
1N/1012/2.318		A	GREENHILL ROAD	2554436	8/07/2005	Fri	1805	AG	CN1C	151A 159A	VV	R	W	DN	L			C	100					
1N/1012/2.318		I	GREENHILL ROAD	2750470	21/01/2007	Sun	1642	BE	4S1C	132A 688A		R	W	O	M	T	N	C	100					
1N/1012/2.318		I	GREENHILL ROAD	2854112	14/08/2008	Thu	1945	CB	4S1	135A 803	PV	R	I	DO	HS	T	G	C	100					
1N/1012/2.318		I	GREENHILL ROAD	2854534	14/08/2008	Thu	1955	CB	CS1V	135A 802	M	R	I	DF	F	T	G	C	100					
1N/1012/2.618	300	S	GREENHILL ROAD	2752421	17/04/2007	Tue	1657	CC	CS1	363A 410A	V	R	D	B	F		N	C	100					
1N/1012/2.718	400	S	GREENHILL ROAD	2551310	23/03/2005	Wed	523	CC	4N1	410A	CV	R	D	DO	F		N	C	100					
1N/1012/3.31	500	N	HEMI ST	2652942	28/06/2006	Wed	1125	FD	CS1C	181A 427A		R	D	B	F		N	C	100					
1N/1012/3.4	3400	S	PEKA PEKA ROAD	2956593	27/12/2009	Sun	1247	FD	4S14V4	112A 181A 181D 901		R	W	O	H		N	C	100					
1N/1012/3.41	400	N	HEMI ST	2513240	8/11/2005	Tue	1514	FD	CS1C	181A		R	D	B	F		N	C	100			1		
1N/1012/3.46	350	N	HEMI ST	2553732	27/07/2005	Wed	1500	CC	CN1	135A 806	C	R	W	O	L		N	C	100					

First Street	Distance	D I R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	M D V R / M VN VVV / T 1	234	Factors and Roles (A is for vehicle 1, B is for veh 2 etc)	OBJECT	CURVE	WETNESS	LIGHT	WETHER	JUNCT	CONTRL	MARKS	SPDLMT	Total Inj FATRN	SERN	MIN	PED age	CYC age
1N/1012/3.46	350	N	HEMI ST	2850719	16/02/2008	Sat	1334	FD	CS1CC	112B 181B 191C		R	D	O	F		N	C	100					
1N/1012/3.5	310	N	HEMI ST	2850796	16/02/2008	Sat	1336	FD	CS14	331A 350A		R	D	B	F		N	C	100					
1N/1012/3.5	310	N	HEMI ST	2850521	16/02/2008	Sat	1336	BA	CS1C	125A 358A		R	D	B	F		N	C	100					
1N/1012/3.563	1200	N	TE MOANA ROAD	2610043	30/05/2006	Tue	1742	BE	CS1C	128A 402A	V	R	D	TN	F		N	C	100	1	1	2		
1N/1012/3.656	800	N	NGAIO ROAD	2656887	29/11/2006	Wed	1131	FD	4S1C	181A		R	D	O	F		N	C	100					
1N/1012/3.71	100	N	HEMI ST	2757076	9/12/2007	Sun	1742	FD	4N1C	135A 181A 801		R	W	O	L		N	C	100					
1N/1012/3.73	80	N	HEMI ST	2855824	23/10/2008	Thu	1616	FD	CS1VC	181A	V	R	W	O	L		N	C	100					
1N/1012/3.785	25	N	HEMI ST	2656056	8/12/2006	Fri	1915	EC	CN1		911 W	R	D	O	F		N	C	70					
1N/1012/4.01	200	S	HEMI ST	2651558	13/04/2006	Thu	1425	FD	VN1T	181A 191B		R	D	B	F		N	C	70					
1N/1012/4.116		I	MARTIN ST	2813268	29/10/2008	Wed	1410	GD	4S1C	333A 351A		R	D	O	F	T	G	C	70			1	39	
1N/1012/4.156	300	N	NGAIO ROAD	2512848	5/09/2005	Mon	950	CC	CS1O	354A 410A 504A	M	R	D	O	F		N	C	70			1		
1N/1012/4.21	400	S	HEMI ST	2711102	4/02/2007	Sun	1928	NA	CS1E	370A 105B 712B		R	D	O	F		N	C	70			1		
1N/1012/4.276	180	N	NGAIO ROAD	2811020	2/01/2008	Wed	1525	CB	CS1T	410A	M	R	D	B	F		N	P	70			2		
1N/1012/4.336	120	N	NGAIO ROAD	2951787	11/04/2009	Sat	1326	CB	TN1TT	197A 150C	M	R	D	B	F		N	C	50					
1N/1012/4.356	100	N	NGAIO ROAD	2954019	11/07/2009	Sat	1615	JA	CN1C	308B 925		R	D	O	F	D	N	C	50					
1N/1012/4.356	100	N	NGAIO ROAD	2755485	2/09/2007	Sun	1807	FD	CS1VC	331A		R	D	B	F			C	70					
1N/1012/4.356	100	N	NGAIO ROAD	2953251	1/07/2009	Wed	1830	LB	CN1V	303B 927		R	D	DO	F	D	N	R	50					
1N/1012/4.356	100	N	NGAIO ROAD	2656899	21/12/2006	Thu	730	AO	CN1T	170A		R	D	O	F		N	P	50					
1N/1012/4.376	80	N	NGAIO ROAD	2812520	18/07/2008	Fri	1814	LB	CN1C	303B 927		R	D	DO	F	D	N	C	50			2		
1N/1012/4.406	50	N	NGAIO ROAD	2650786	16/02/2006	Thu	2047	LB	4N1C	303B 927		R	D	DO	F	D	N	C	50					
1N/1012/4.456		I	NGAIO ROAD	2956876	25/12/2009	Fri	1645	AA	CN14	184A 817		R	D	B	F	Y	G	P	50					
1N/1012/4.456		I	NGAIO ROAD	2651411	27/03/2006	Mon	1345	AO	CN1T	372A 386A		R	D	B	F	T	G	P	50					
1N/1012/4.456		I	NGAIO ROAD	2956875	10/12/2009	Thu	750	AC	TN1C	181A 184A 817		R	D	O	F	T	G	P	50					
1N/1012/4.456		I	NGAIO ROAD	2554149	5/08/2005	Fri	1005	KB	BS1C	173A 301B 387B		R	D	B	F	T	S	R	50					
1N/1012/4.456		I	NGAIO ROAD	2653596	20/07/2006	Thu	1937	KB	VS1CC	137A 321B 645B 137C	I	R	W	DO	F	T	S	R	50					
1N/1012/4.456		I	NGAIO ROAD	2750467	18/02/2007	Sun	1533	AA	CS1C	372A		R	D	B	F	X	T	C	50					
1N/1012/4.456		I	NGAIO ROAD	2752104	23/04/2007	Mon	1600	JA	CN1C	301B 404B		R	D	B	F	T	S	R	50					
NGAIO ROAD	20	W	SH 1N	2855429	11/10/2008	Sat	1300	LB	CE1C	303B 375B 926		R	D	O	F	D	N	C	50					
NGAIO ROAD	20	W	SH 1N	2553907	23/07/2005	Sat	1835	FD	CW1CC	153A 331A 355C		R	D	DO	F	T	N	C	50					
1N/1012/4.486	30	S	NGAIO ROAD	2553636	19/07/2005	Tue	1930	MC	CN1C	300B 372B	I	R	D	DO	F		N	R	50					
1N/1012/4.506	50	S	NGAIO ROAD	2811735	27/03/2008	Thu	1539	MA	CN1V	373B		R	D	B	F		N	C	50			2		
1N/1012/4.616	15	N	ELIZABETH ST	2756708	3/11/2007	Sat	1325	FE	CS14	331A		R	D	O	F	T	T	R	50					
1N/1012/4.621	10	N	ELIZABETH ST	2754859	5/09/2007	Wed	1301	MA	VN1C	331A	J	R	D	B	F	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2754746	19/08/2007	Sun	1053	JA	CS1C	322A		R	D	O	F	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2954923	29/09/2009	Tue	1307	LB	CS1C	303B 505B		R	D	O	F	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2553635	21/07/2005	Thu	1300	FE	CN1C	181A		R	W	O	L	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2552068	18/03/2005	Fri	1800	FE	CN1C	181A 191B		R	D	O	F	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2551876	2/05/2005	Mon	830	FE	BS14C	385A	P	R	D	O	F	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2712193	18/05/2007	Fri	1211	GD	VW2CC	330A 350A		R	D	B	F	T	T	R	50			1		
1N/1012/4.631		I	ELIZABETH ST	2953795	2/08/2009	Sun	1901	JA	CS1C	322A		R	D	DO	F	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2953781	31/07/2009	Fri	1925	LB	CS14	303B		R	D	DO	F	T	T	P	50					
1N/1012/4.631		I	ELIZABETH ST	2950634	26/02/2009	Thu	1650	JA	CS1C	322A		R	D	B	F	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2950107	20/01/2009	Tue	1103	AA	CN1B	403A 423A		R	D	B	F	T	T	C	50					
1N/1012/4.631		I	ELIZABETH ST	2913119	18/10/2009	Sun	1223	LB	CS1C	303B		R	D	O	F	T	T	R	50			1		
1N/1012/4.631		I	ELIZABETH ST	2857350	24/12/2008	Wed	1720	JA	CS1C	322A 103B		R	W	B	L	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2853403	28/06/2008	Sat	1430	CB	CS1	133A 423A	T	R	D	O	F	T	T	R	50					
1N/1012/4.631		I	ELIZABETH ST	2850546	10/02/2008	Sun	1430	FE	4S1M	403A 427A		R	D	B	F	T	T	C	50					
1N/1012/4.631		I	ELIZABETH ST	2850037	9/01/2008	Wed	705	LB	BS14	303B		R	W	O	L	T	T	R	50					
1N/1012/4.663	100	N	TE MOANA ROAD	2650595	31/01/2006	Tue	1605	MC	CN1C	300B 372B		R	D	B	F		N	C	50					
1N/1012/4.733	30	N	TE MOANA ROAD	2652504	6/05/2006	Sat	1845	CB	4N1C	108A 130A	M	R	D	DO	F		N	R	50					
1N/1012/4.748	15	N	TE MOANA ROAD	2755718	10/10/2007	Wed	1415	FD	4N1C	181A		R	D	O	F		N	C	50					
1N/1012/4.753	10	N	TE MOANA ROAD	2654004	25/07/2006	Tue	1213	QO	TS14	660A	M	R	D	O	F	T	N	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2755573	30/09/2007	Sun	1438	KA	CN1C4	111B 331B		E	D	B	F	T	G	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2751589	14/03/2007	Wed	650	JA	TN1CC	322A		R	D	O	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2755468	18/08/2007	Sat	1800	FE	CN1C	331A 507A		R	D	DO	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2652474	2/06/2006	Fri	1522	KB	CS1V4	322A	I	R	D	B	F	T	T	R	50					

NZ TRANSPORT AGENCY
WAKA KOTAHI

First Street	Distance	D I R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	H V R T	D R VN VVV 1 234	Factors and Roles (A is for vehicle 1, B is for veh 2 etc)	OBJECT	CURVE	UETNES	LIGHT	WETHER	JUNCT	CONTRL	MARKS	SPDLHT	Total Inj FAT	SER	MIN	PED age	CYC age
1N/1012/4.763		I	TE MOANA ROAD	2652709	6/06/2006	Tue	1615	JA	CN1C	322B		R	D	B	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2752754	30/05/2007	Wed	1017	LB	CN14	322A		R	D	B	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2654119	29/08/2006	Tue	1507	FE	CS1C	181A		R	D	B	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2713308	18/10/2007	Thu	1105	LB	CN1CC	303B 404B		R	D	O	L	T	T	R	50			1		
1N/1012/4.763		I	TE MOANA ROAD	2954508	1/09/2009	Tue	950	LB	4N1V	303B 375B 901		R	W	O	H	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2552477	28/05/2005	Sat	1730	LB	CN1C	303B 375B		R	D	DO	F	T	T	C	50					
1N/1012/4.763		I	TE MOANA ROAD	2613648	24/11/2006	Fri	1646	AD	MN1CC	135A 158A 812		R	D	B	F	T	T	C	50			1		
1N/1012/4.763		I	TE MOANA ROAD	2551623	13/04/2005	Wed	925	FE	TS1C	181A 191B		R	D	O	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2650762	26/02/2006	Sun	1738	FB	CS1C	331A		R	D	B	F	T	T	C	50					
1N/1012/4.763		I	TE MOANA ROAD	2851638	4/04/2008	Fri	1503	FE	CS1C	181A 422B		R	W	O	L	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2852642	31/05/2008	Sat	2015	DA	CE2	133A	ST	R	D	DO	F	T	T	C	50					
1N/1012/4.763		I	TE MOANA ROAD	2950259	24/01/2009	Sat	1511	LB	CN1C	303B 404B		R	D	O	F	T	T	C	50					
1N/1012/4.763		I	TE MOANA ROAD	2950157	9/01/2009	Fri	1250	LB	CN1C	324A 303B 325B		R	D	O	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2555631	26/10/2005	Wed	1345	LB	CN1C	303B 353B 375B		R	D	B	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2554370	6/09/2005	Tue	1000	KB	4S14	322A		E	D	B	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2855035	6/10/2008	Mon	1445	LB	CN1C	303B 387B		R	D	B	F	T	T	R	50					
1N/1012/4.763		I	TE MOANA ROAD	2752246	30/03/2007	Fri	1849	LB	CN1C	303B		R	W	DO	L	T	T	R	50					
TE MOANA ROAD	15	W	SH 1N	2555767	24/11/2005	Thu	945	KB	CE1C	308B 922		R	D	B	F	D	N	C	50					
TE MOANA ROAD	20	W	SH 1N	2953597	16/07/2009	Thu	2043	LB	CW1C	303B 922		E	D	DO	F	D	N	C	50					
TE MOANA ROAD	20	W	SH 1N	2656155	11/12/2006	Mon	1545	KB	TE1C	308B 330B 922		R	D	B	F	D	N	P	50					
1N/1012/4.783	20	S	TE MOANA ROAD	2856826	22/12/2008	Mon	1501	FD	CN1V	181A 402A		R	D	B	F		N	R	50					
1N/1012/4.813	50	S	TE MOANA ROAD	2752105	1/05/2007	Tue	1630	FA	CS1C	181A 402A 191B 357B		R	D	B	F		N	C	50					
1N/1012/4.863	100	S	TE MOANA ROAD	2652388	16/04/2006	Sun	1250	FD	CS14CC	181A 191B		R	D	B	F		N	C	70					
1N/1012/4.863	100	S	TE MOANA ROAD	2950429	10/02/2009	Tue	1850	DB	CN1	102A 410A	TX	E	D	O	F		N	C	70					
1N/1012/5.013	250	S	TE MOANA ROAD	2852699	30/05/2008	Fri	810	FD	CS1V	181A		R	D	O	F		N	C	70					
1N/1012/5.063	300	S	TE MOANA ROAD	2711297	19/02/2007	Mon	1930	AB	CS1CCT	151A 156A 197B 191C 181D 830		M	D	TF	F		N	C	70			1		
1N/1012/5.105	340	S	TE MOANA ROAD	2951922	8/03/2009	Sun	1415	MA	CN1C	373B 927		E	D	B	F		N	P	70					
1N/1012/5.143	380	S	TE MOANA ROAD	2751180	26/01/2007	Fri	1540	FD	CS1C4	181A 191B		R	D	B	F		N	C	70					
1N/1012/5.153	390	S	TE MOANA ROAD	2954245	14/08/2009	Fri	1629	FD	CS1V	181A 191B		R	D	O	F		N	C	70					
1N/1012/5.163	400	S	TE MOANA ROAD	2754476	13/07/2007	Fri	945	FD	VS1VC	331A 352A		R	D	B	F		N	C	70					
1N/1012/5.163	400	S	TE MOANA ROAD	2911370	7/03/2009	Sat	1705	BE	CN1C	102A 410A		R	D	O	F		N	C	70			1		
1N/1012/5.176	30	N	WAIKANAE RIV BR	2912904	10/09/2009	Thu	1242	MC	CS1C	372B 927		E	D	B	F	D	N	C	70			2		
1N/1012/5.213	450	S	TE MOANA ROAD	2852949	14/06/2008	Sat	1205	FD	VS1CCM	331A 410A		R	D	B	F		N	L	70					
1N/1012/5.213	450	S	TE MOANA ROAD	2550315	4/02/2005	Fri	1132	FD	VS1CCV	331A 331B 810		R	D	B	F		N	C	70					
1N/1012/5.213	450	S	TE MOANA ROAD	2550303	4/02/2005	Fri	1100	FD	CS1VV	331A		R	D	B	F		N	C	70					
1N/1012/5.213	450	S	TE MOANA ROAD	2653431	26/06/2006	Mon	944	FD	VS1VVV	181A 181C 928		R	D	B	F		N	C	70					
1N/1012/5.233	470	S	TE MOANA ROAD	2656646	20/12/2006	Wed	1530	FD	TS1CC	112A 331A 928		R	D	B	F	D	N	C	70					
1N/1012/5.248		A	FIRTH CONCRETE ENT	2711215	18/01/2007	Thu	1250	GC	CS1C	174B 372B 927		E	D	B	F	D	N	C	100			2		
1N/1012/5.248		A	FIRTH CONCRETE ENT	2753861	19/07/2007	Thu	845	GD	CS1C	181A 400A 928		R	D	B	F	D	N	C	100					
1N/1012/5.248		A	FIRTH CONCRETE ENT	2754658	19/07/2007	Thu	857	FD	CS1C	181A 191B 927		R	D	O	F	D	N	C	100					
1N/1012/5.248		A	FIRTH CONCRETE ENT	2554069	15/08/2005	Mon	1152	FD	CS1C	112A 331A		R	D	B	F		N	C	100					
1N/1012/5.248		A	FIRTH CONCRETE ENT	2511144	19/02/2005	Sat	1400	FD	CS1CCC	331A 352A 181B 831 928		E	D	B	F	D	N	L	100			1		
1N/1012/5.263	500	S	TE MOANA ROAD	2751017	25/01/2007	Thu	640	FA	4S1C	350A 386A 357B		R	D	TF	F		N	C	100					
1N/1012/5.263	500	S	TE MOANA ROAD	2951795	19/04/2009	Sun	1425	FD	CS1CCC	181A 181C		R	D	O	F		N	C	70					
1N/1012/5.363	600	S	TE MOANA ROAD	2610024	28/03/2006	Tue	15	DB	VN1	106A 410A	B	E	D	DO	F		N	C	100	1				
1N/1012/5.423	660	S	TE MOANA ROAD	2611842	17/05/2006	Wed	915	DA	CS1	130A 350A	V	E	D	B	F		N	C	100			1		
1N/1012/5.563	800	S	TE MOANA ROAD	2954237	22/08/2009	Sat	1140	FD	CN1C	181A		E	D	B	F		N	C	100					
1N/1012/5.636	450	E	KEBBELL DRIVE	2956983	23/10/2009	Fri	1633	BC	CE1C	121A 504A 137B	P	E	D	B	F		N	L	100					
1N/1012/5.786	300	N	KEBBELL DRIVE	2612425	19/07/2006	Wed	1514	BA	CN1CCV	129A 410A	G	R	D	O	F		N	C	100		2	3		
1N/1012/5.886	200	N	KEBBELL DRIVE	2757086	14/12/2007	Fri	910	CB	TN1C	136A 631A	D	R	D	B	F		N	L	100					
1N/1012/5.936	150	E	KEBBELL DRIVE	2913488	26/10/2009	Mon	1736	BA	CN1CC	410A		R	D	O	F		N	C	100			2		
1N/1012/5.986	100	N	KEBBELL DRIVE	2811821	24/04/2008	Thu	1500	QG	VS1	615A 687A	E	R	D	B	F		N	C	100			1		
1N/1012/5.986	100	N	KEBBELL DRIVE	2513004	21/10/2005	Fri	1415	FD	MS1T	132A 181A 191B		R	W	O	L		N	C	100			1		
1N/1012/6.036	50	N	KEBBELL DRIVE	2552721	30/05/2005	Mon	205	MO	CS1T	103A 125A		R	W	DO	L		N	C	100					
1N/1012/6.086		I	KEBBELL DRIVE	2855240	6/09/2008	Sat	1600	KA	CN1C	302B		R	D	B	F	T	G	C	100					
1N/1012/6.126	40	S	KEBBELL DRIVE	2556457	9/12/2005	Fri	1812	FD	CN1C	181A		R	D	O	F		N	C	100					

First Street	Distance	D I R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	MV (H D / V R)	Vehicles (H VN VVV / T 1 234)	Factors and Roles (A is for vehicle 1, B is for veh 2 etc)	OBJECT	CURVE	WETNES	LIGHT	WETHER	JUNCT	CONTRL	MARKS	SPDLMT	Total Inj FAT	Total Inj SER	Total Inj MIN	PED age	CYC age
1N/1012/6.146	60	S	KEBBELL DRIVE	2556127	9/12/2005	Fri	1050	JA	CN1T	308B 386B 927		R	W	O	F	D	N	P	100					
1N/1012/6.286	200	S	KEBBELL DRIVE	2752575	23/05/2007	Wed	1740	AO	TN1C	386A		R	D	B	F		N	L	100					
1N/1012/6.336	250	W	KEBBELL DRIVE	2656808	30/12/2006	Sat	1500	FD	VN14	331A 350A		R	D	B	F		N	C	100					
1N/1012/6.386	300	S	KEBBELL DRIVE	2757417	4/12/2007	Tue	1810	KA	BN1C	308B 434B 922	V	R	D	B	F	D	N	C	100					
1N/1012/6.436	350	W	KEBBELL DRIVE	2956281	29/10/2009	Thu	842	FD	CS1C4V	181A 330A 132D		E	D	O	F		N	C	80					
1N/1012/6.536	450	S	KEBBELL DRIVE	2613486	3/12/2006	Sun	1855	DA	CN1	103A	GT	E	D	O	F		N	L	100			1		
1N/1012/6.536	450	S	KEBBELL DRIVE	2711192	25/01/2007	Thu	1750	AB	CS1CB	152A 137B		R	D	B	F		N	L	100			1		
1N/1012/6.536	450	S	KEBBELL DRIVE	2752448	13/05/2007	Sun	1725	FD	CS1CC	181A 191B		R	D	O	F		N	L	100					
1N/1012/6.686	600	S	KEBBELL DRIVE	2912124	26/05/2009	Tue	1734	FD	CN14	112A 159A 402A		R	D	DN	F		N	L	100			2		
1N/1012/6.886	800	S	KEBBELL DRIVE	2952975	10/06/2009	Wed	1745	FD	4S1C	181A		R	W	DO	F		N	L	100					
1N/1012/6.886	800	S	KEBBELL DRIVE	2752381	5/03/2007	Mon	630	AC	TS1T	159A 434A		R	D	B	F		N	L	100					
1N/1012/7.365	800	N	OTAIHANGA ROAD	2956463	12/12/2009	Sat	1530	AC	CS1V	158A 184A		R	D	O	F		N	L	100					
1N/1012/7.365	800	N	OTAIHANGA ROAD	2711684	4/04/2007	Wed	2036	DA	CS1	130A 359A	EG	E	D	DN	F		N	L	100			1		
1N/1012/7.365	800	N	OTAIHANGA ROAD	2512106	24/05/2005	Tue	1815	LB	MN1C	303B 375B 929	F	R	D	DN	F	D	N	L	100		1			
1N/1012/7.665	500	N	OTAIHANGA ROAD	2850460	16/01/2008	Wed	2130	MC	TN1T	372B 817		E	D	DN	F		N	C	100					
1N/1012/7.665	500	N	OTAIHANGA ROAD	2712707	19/08/2007	Sun	1300	BF	CS1CV	129A 134A	E	M	D	B	F		N	C	100		3			
1N/1012/7.715	450	N	OTAIHANGA ROAD	2513401	5/12/2005	Mon	2254	DA	CS1	130A 506A 650A	G	M	D	DN	F		N	C	100			1		
1N/1012/7.765	400	N	OTAIHANGA ROAD	2655694	18/11/2006	Sat	1300	AO	4N1	615A 688A	P	R	W	O	L		N	L	100					
1N/1012/7.765	400	N	OTAIHANGA ROAD	2551054	23/03/2005	Wed	1650	FA	TS1C	181A		E	D	B	F		N	L	100					
1N/1012/7.765	400	N	OTAIHANGA ROAD	2757895	12/12/2007	Wed	854	FD	VE1C	331A 817		E	D	O	F		N	C	100					
1N/1012/7.865	300	N	OTAIHANGA ROAD	2655209	2/10/2006	Mon	1956	BF	CS1V	110A 132A 155A	E	E	D	DO	F		N	L	100					
1N/1012/7.865	300	N	OTAIHANGA ROAD	2954929	20/09/2009	Sun	1800	FD	CS1C	331A		E	D	B	F		N	L	100					
1N/1012/7.915	250	N	OTAIHANGA ROAD	2712332	13/04/2007	Fri	900	DB	CS1	104A 410A	EF	E	D	O	F		N	L	80			1		
1N/1012/7.965	200	N	OTAIHANGA ROAD	2954211	8/08/2009	Sat	305	BB	VN1C	103A 410A		E	D	DO	F		N	L	80					
1N/1012/8.125	40	N	OTAIHANGA ROAD	2511972	27/04/2005	Wed	2122	DA	CN1	132A 410A	C	M	D	DO	F		N	P	100		1			
1N/1012/8.135	30	N	OTAIHANGA ROAD	2955963	1/12/2009	Tue	905	FD	CN1C	110A 181A		E	W	O	LS	T	G	P	80					
1N/1012/8.165		I	OTAIHANGA ROAD	2956504	7/12/2009	Mon	1900	LB	CN1C	303B 375B	IS	E	D	O	F	T	G	R	80					
1N/1012/8.165		I	OTAIHANGA ROAD	2711353	6/03/2007	Tue	1236	LB	CN1C	303B 375B		R	D	B	F	T	S	P	80			1		
1N/1012/8.165		I	OTAIHANGA ROAD	2955301	16/10/2009	Fri	1808	FD	CN1CC	135A 331A 801 831		E	W	DO	L	T	G	L	80					
1N/1012/8.165		I	OTAIHANGA ROAD	2853012	24/06/2008	Tue	1750	GA	CE2C	331A 387A		M	W	DO	L	T	S	P	80					
1N/1012/8.165		I	OTAIHANGA ROAD	2811826	19/04/2008	Sat	800	DC	CE2	501A		R	D	O	F	T	S	L	80		1			
1N/1012/8.165		I	OTAIHANGA ROAD	2811499	15/03/2008	Sat	811	KA	4N1C	113B 375B		E	D	B	F	T	S	R	100		1	1		
1N/1012/8.165		I	OTAIHANGA ROAD	2756112	8/10/2007	Mon	1612	GD	CS1C	386A		E	W	O	M	T	S	R	100					
1N/1012/8.165		I	OTAIHANGA ROAD	2513323	15/11/2005	Tue	1800	LB	4N1C	303B		E	D	B	F	T	S	P	100			1		46
1N/1012/8.165		I	OTAIHANGA ROAD	2511965	18/04/2005	Mon	1827	LB	CN1C	303B 382B	F	R	D	DO	F	T	S	L	100		2			
1N/1012/8.165		I	OTAIHANGA ROAD	2612850	16/08/2006	Wed	1620	LB	SN1C	303B 375B		E	D	O	F	T	S	R	80			1		
1N/1012/8.165		I	OTAIHANGA ROAD	2555702	4/11/2005	Fri	2020	LB	CN1V4C	197A 301B 387B 197C 197D		M	D	DO	F	T	S	R	100					
1N/1012/8.165		I	OTAIHANGA ROAD	2555334	20/10/2005	Thu	800	DA	VS1	111A 135A 801 810	EFT	E	W	O	L	T	S	R	100					
1N/1012/8.165		I	OTAIHANGA ROAD	2554369	27/07/2005	Wed	1510	DA	CN1	135A 806	P	E	W	O	L	T	S	P	100					
1N/1012/8.165		I	OTAIHANGA ROAD	2650326	22/01/2006	Sun	1712	JC	CS1C	301B		E	D	B	F	T	S	R	100					
1N/1012/8.165		I	OTAIHANGA ROAD	2652171	31/05/2006	Wed	837	FA	CN1C	181A		R	D	B	F	T	S	L	100					
1N/1012/8.165		I	OTAIHANGA ROAD	2613763	25/12/2006	Mon	1230	FD	CN1CC	181A 181B		M	W	O	L	T	S	R	80			2		
OTAIHANGA ROAD	30	W	SH 1N	2855595	1/11/2008	Sat	1148	FD	CW1CVC	331A 370C 832		E	D	O	FS		N	R	80					
1N/1012/8.215	50	S	OTAIHANGA ROAD	2611133	2/02/2006	Thu	2335	DB	VN1	103A 131A	F	M	W	DO	L		N	L	100			1		
1N/1012/8.245	80	S	OTAIHANGA ROAD	2752034	18/02/2007	Sun	525	CC	CN1	103A 410A	F	R	D	DN	F		N	C	80					
1N/1012/8.245	80	S	OTAIHANGA ROAD	2654979	19/10/2006	Thu	911	EO	MN1C	112A 514A	Q	R	D	O	F		N	C	80					
1N/1012/8.265	100	S	OTAIHANGA ROAD	2814020	22/11/2008	Sat	1725	BC	CN14C	121A		M	D	O	F		N	C	80			1		
1N/1012/8.365	200	S	OTAIHANGA ROAD	2513254	11/11/2005	Fri	1855	MB	CS1C	375B 382B		M	D	O	F		N	L	100			2		
1N/1012/8.415	250	S	OTAIHANGA ROAD	2511167	5/02/2005	Sat	1315	BF	CS1C	120A 410A		E	D	B	F		N	C	100			1		
1N/1012/8.425	260	S	OTAIHANGA ROAD	2511490	9/03/2005	Wed	2045	BB	CS1C	104A 123A	T	M	D	DN	F		N	L	100		1	1		
1N/1012/8.565	400	S	OTAIHANGA ROAD	2653944	13/07/2006	Thu	1820	GD	CS1C	501B 927		R	D	DN	F	D	N	L	100					
1N/1012/8.631		A	KAPITI LOOKOUT	2513663	22/12/2005	Thu	1429	BF	4S1C	137A 407A	C	E	D	O	F		N	C	100			1		
1N/1012/8.635	470	S	OTAIHANGA ROAD	2512016	20/05/2005	Fri	1655	GC	CS1C	300B 372B 929		R	W	O	L	D	N	C	100			1		
1N/1012/8.665	500	S	OTAIHANGA ROAD	2750329	20/01/2007	Sat	1330	FD	4N1C4	331A		R	D	B	F		N	L	80					
1N/1012/8.765	600	S	OTAIHANGA ROAD	2556475	27/12/2005	Tue	1102	PA	CS1C4	331A 191B 382C		R	D	O	F		N	L	100					
1N/1012/8.965	800	S	OTAIHANGA ROAD	2656945	20/12/2006	Wed	1810	AO	TN1C	381A 434A		R	D	B	F		N	L	80					

First Street	Distance	D I R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	MV DR (T 1)	VN VVV (234)	Factors and Roles (A is for vehicle 1, B is for veh 2 etc)	OBJECT	CURVE	WETNES	LIGHT	WETHER	JUNCT	CONTRL	MARKS	SPDLMT	Total Inj F	Total Inj S	Total Inj M	PED Age	CYC Age
1N/1012/9.125	960	S	OTAIHANGA ROAD	2513183	17/11/2005	Thu	2010	MC	CN14	357B 372B		R	D	TF	F		N	L	100			1		
1N/1012/9.165	1000	S	OTAIHANGA ROAD	2552851	3/06/2005	Fri	1912	FD	CN1C	331A 353A		E	D	DN	F		N	C	100					
1N/1012/9.265	1000	N	NIKAU PALM ROAD	2854972	12/09/2008	Fri	1843	FD	CN14C	331A 352A		R	D	DO	F		N	C	80					
1N/1012/9.295	1130	S	OTAIHANGA ROAD	2811035	18/01/2008	Fri	1215	FD	VN1CC	331A 501A		R	D	B	F		N	L	80			1		
1N/1012/9.352	400	N	LINDALE ENT	2553612	17/07/2005	Sun	1718	BE	CN1C	410A		R	D	TN	F		N	L	100					
1N/1012/9.365	1200	S	OTAIHANGA ROAD	2956763	18/12/2009	Fri	1118	FD	CN1CC	331A 358A		R	D	O	F		N	C	80					
1N/1012/9.365	1200	S	OTAIHANGA ROAD	2612653	29/07/2006	Sat	1510	GC	MS14	174B 372B 929		R	D	O	F	D	N	L	100		1	1		
1N/1012/9.388	500	N	NIKAU PALM OFF SBD	2754375	1/08/2007	Wed	1500	GC	CS1C	381B 929		R	D	B	F	D	N	L	80					
1N/1012/9.452	300	N	LINDALE ENT	2954792	18/09/2009	Fri	1812	FD	CN1CC	102A 359A		R	D	DO	F		N	L	80					
1N/1012/9.552	200	N	LINDALE ENT	2553097	2/07/2005	Sat	315	DB	CN1	130A 410A	FT	R	D	DN	F		N	C	70					
1N/1012/9.556	500	N	NIKAU PALM ROAD	2655163	23/10/2006	Mon	1832	CB	VS1	331A 350A	E	R	W	O	L		N	L	80					
1N/1012/9.665	1500	S	OTAIHANGA ROAD	2850618	21/02/2008	Thu		DB	4N1	350A	P	E	D	B	F		N	X	80					
1N/1012/9.702	50	N	LINDALE ENT	2552051	1/05/2005	Sun	1818	FD	CS1CCC	132A 181A 181B 181C		R	W	DN	L		N	L	80					
1N/1023/0.15	500	N	KAPITI ROAD	2856419	30/11/2008	Sun	345	CB	CS1	358A 402A		R	D	DO	F		N	C	50					
1N/1023/0.164		I	AMOHIA ST	2553539	11/07/2005	Mon	1730	KA	CN1C	303B 377B		R	D	O	F	T	G	C	50					
1N/1023/0.164		I	AMOHIA ST	2552360	9/05/2005	Mon	1455	FA	CN1C	302A 375A		M	D	B	F	T	G	C	50					
1N/1023/0.164		I	AMOHIA ST	2553427	8/07/2005	Fri	1137	JA	CN1C	301B 375B	BF	M	W	O	L	T	S	R	50					
1N/1023/0.164		I	AMOHIA ST	2612926	23/09/2006	Sat	1215	JA	CN1C	302B 382B 402B		R	D	B	F	T	G	R	50			2		
1N/1023/0.164		I	AMOHIA ST	2755087	11/09/2007	Tue	1805	FD	CN14C	331A 352A		R	D	TF	F	T	G	C	50					
1N/1023/0.164		I	AMOHIA ST	2751797	19/04/2007	Thu	1617	JA	CN1C	302B 377B		R	D	B	F	T	G	R	50					
1N/1023/0.164		I	AMOHIA ST	2756569	14/11/2007	Wed	958	LB	VN1C	303B		E	D	O	FS	T	G	P	50					
1N/1023/0.164		I	SH 1N	2655536	7/11/2006	Tue	900	BF	CE2C	133A		R	W	O	L	T	N	C	50					
1N/1023/0.164		I	SH 1N	2852327	8/05/2008	Thu	1750	JC	CE2C	302A		E	D	DO	F	T	G	P	50					
1N/1023/0.168		I	AMOHIA ST	2952466	31/05/2009	Sun	1400	JA	CN1C	302B		R	D	O	F	T	G	C	50					
1N/1023/0.168		I	AMOHIA ST	2951595	31/03/2009	Tue	400	AO	CN1V	313A 372A 691B		E	D	DO	F	T	N	L	50					
1N/1023/0.168		I	AMOHIA ST	2911108	15/01/2009	Thu	1016	LB	MN1C	303B 363B 387B		E	D	B	F	T	G	L	50		1			
1N/1023/0.168		I	AMOHIA ST	2950289	16/01/2009	Fri	1805	FD	4N1CC	181A 191B		R	D	O	F	T	G	C	50					
1N/1023/0.168		I	AMOHIA ST	2856566	9/12/2008	Tue	1530	KA	VN1C	302B 377B		E	D	B	F	T	G	R	50					
1N/1023/0.168		I	AMOHIA ST	2855384	16/10/2008	Thu	1830	JA	VN1C	302B 353B		R	W	O	L	T	G	C	50					
1N/1023/0.214	50	S	AMOHIA ST	2612870	9/09/2006	Sat	1145	JA	TN1C	308B 427B 929		R	D	B	F	D	N	C	50			1		
1N/1023/0.236	400	N	RIMUTAKA ST	2856417	11/12/2008	Thu	2322	FA	CS1C	101A 112A 514A		R	D	DO	F		N	C	80					
1N/1023/0.244	80	S	AMOHIA ST	2654033	30/07/2006	Sun	1210	FD	4N1C	331A		R	D	O	F		N	P	50					
1N/1023/0.445	200	N	KAPITI ROAD	2550779	7/03/2005	Mon	1003	MB	VS1CC	191A 382B 181C 927		R	D	B	F	D	N	C	50					
1N/1023/0.545	100	N	KAPITI ROAD	2553859	25/07/2005	Mon	823	AA	CN1T	372A		R	D	O	F		N	P	50					
1N/1023/0.545	100	N	KAPITI ROAD	2752848	4/06/2007	Mon	1250	JA	CS1C	151A 308B 377B 922		R	D	O	F	D	N	C	50					
1N/1023/0.6	50	N	KAPITI ROAD	2952719	15/03/2009	Sun	1335	AO	TN1C	370A		R	D	O	F		N	P	50					
1N/1023/0.61	40	N	KAPITI ROAD	2950835	1/05/2009	Fri	857	LB	CS1C	303B 377B 922		R	D	B	F	D	N	P	50					
1N/1023/0.61	40	N	KAPITI ROAD	2856248	27/11/2008	Thu	1335	MD	VS1C	308B 314B 922		R	D	B	F	D	N	C	50					
1N/1023/0.615	30	N	KAPITI ROAD	2850042	5/01/2008	Sat	2234	HA	CN1C	308B 375B 400B 922		R	D	DO	F	D	N	P	50					
1N/1023/0.62	30	N	KAPITI ROAD	2951093	28/01/2009	Wed	1730	AA	TN1C	184A		R	D	O	F		N	C	50					
1N/1023/0.62	30	N	KAPITI ROAD	2956189	1/12/2009	Tue	752	JA	CS1C	308B 314B 375B 922		R	W	O	L	D	N	R	50					
1N/1023/0.625	20	N	KAPITI ROAD	2750866	19/02/2007	Mon	800	JA	VS1C	308B 377B 922		R	D	B	F	D	N	C	50					
1N/1023/0.635	15	N	KAPITI ROAD	2912994	15/11/2009	Sun	1550	JA	4S1C	308B 922		R	D	O	F	D	N	R	50			1		
1N/1023/0.645		I	KAPITI ROAD	2551232	5/03/2005	Sat	1830	LB	CN2C	112A 303B		R	D	O	L	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2552124	9/05/2005	Mon	2005	HA	CN2B	322A		R	D	DO	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2553332	9/07/2005	Sat	1400	AA	VS1V	312A		R	D	B	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2553605	8/07/2005	Fri	1850	LB	4N1C	324A 303B 375B		R	D	DO	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2555984	10/11/2005	Thu	1745	LB	CS1CV	303B		R	D	O	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2756431	18/09/2007	Tue	1530	HA	4S1C	322A		R	D	B	F	X	T	C	50					20
1N/1023/0.645		I	KAPITI ROAD	2756716	24/11/2007	Sat	1433	LB	VS1C	303B 402B		R	D	B	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2812200	16/06/2008	Mon	847	NC	CE2S	376A 645A		R	D	O	F	X	T	C	50			1		
1N/1023/0.645		I	KAPITI ROAD	2850085	6/01/2008	Sun	1748	LB	CN1C	303B		R	D	TF	F	X	T	R	50					
1N/1023/0.645		I	KAPITI ROAD	2850795	11/02/2008	Mon	801	KB	CS14C	303B 845		R	D	B	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2851653	1/04/2008	Tue	1520	FD	CN1T	181A		R	D	B	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2851833	22/04/2008	Tue	1835	LB	CW2C	113A 324A		R	D	DO	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2653545	23/07/2006	Sun	1926	LB	CW2C	303B		R	D	DO	F	X	T	N	50					

First Street	Distance	D I R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	M D V R H VN VVV T 1 234	Factors and Roles (A is for vehicle 1, B is for veh 2 etc)	OBJECT	CURVE	WETNES	LIGHT	WETHER	JUNCT	CONTRL	MARKS	SPDLMT	Total Inj FAT	SER	MIN	PED age	CYC age
1N/1023/0.645		I	KAPITI ROAD	2711512	25/03/2007	Sun	1540	LB CW2C	303B		R	D	B	F	X	T	C	50			2		
1N/1023/0.645		I	KAPITI ROAD	2750798	11/02/2007	Sun	1900	FE CN1C	103A		R	D	B	F	X	T	R	50					
1N/1023/0.645		I	KAPITI ROAD	2750888	2/03/2007	Fri	1718	JA CN1CC	322A		R	D	B	F	X	T	R	50					
1N/1023/0.645		I	KAPITI ROAD	2754409	12/06/2007	Tue	1843	LB CW2C	303B		R	D	DO	F	X	T	C	50					14
1N/1023/0.645		I	KAPITI ROAD	2613575	26/11/2006	Sun	1447	CB CW1	132A 322A	P	R	D	O	F	X	T	C	50		1			
1N/1023/0.645		I	KAPITI ROAD	2613708	29/12/2006	Fri	1533	KO SW2C	120A 204A 322A		R	D	B	F	X	T	R	50			1		
1N/1023/0.645		I	KAPITI ROAD	2613791	3/09/2006	Sun	1428	LB CS1C	113A 324A 303B		R	D	B	F	X	T	R	50			1		
1N/1023/0.645		I	KAPITI ROAD	2651302	11/03/2006	Sat	1014	LB CN1V	323B		R	D	B	F	X	T	C	50					33
1N/1023/0.645		I	KAPITI ROAD	2651664	2/04/2006	Sun	1650	LB CN1CC	303B		R	W	O	L	X	T	R	50					
1N/1023/0.645		I	KAPITI ROAD	2511398	15/03/2005	Tue	1345	LB SN2C	113A 303B		R	D	B	F	X	T	R	50			1		
1N/1023/0.645		I	KAPITI ROAD	2513563	16/12/2005	Fri	1426	JA CS1C	303B 377B 922		R	D	B	F	D	T	C	50			1		
1N/1023/0.645		I	KAPITI ROAD	2550236	22/01/2005	Sat	1150	LB CN1V	303B 375B		R	D	B	F	X	T	C	50					
1N/1023/0.645		I	KAPITI ROAD	2550615	8/02/2005	Tue	630	LB CN1T	303B 377B		R	W	O	L	X	T	P	50					
1N/1023/0.65		I	KAPITI ROAD	2953509	6/07/2009	Mon	1300	AA CN1C	386A		R	D	O	F	X	T	C	50					
1N/1023/0.65		I	KAPITI ROAD	2954982	29/09/2009	Tue	1135	LB CN1C	303B 387B		R	D	O	F	X	T	R	50					
1N/1023/0.65		I	KAPITI ROAD	2951054	28/02/2009	Sat	1550	LB CS1C	303B 402B		R	W	O	H	X	T	C	50					
1N/1023/0.65		I	KAPITI ROAD	2913340	26/11/2009	Thu	1955	FE CS1V	113A		R	D	O	F	X	T	R	50			1		64
1N/1023/0.65		I	KAPITI ROAD	2912853	17/09/2009	Thu	1744	NB CW2E	353A 711B		R	D	B	F	X	T	C	50			1		
1N/1023/0.65		I	KAPITI ROAD	2911204	14/02/2009	Sat	1300	HA SN14	322A		R	D	O	F	X	T	C	50			1		
1N/1023/0.65		I	KAPITI ROAD	2952645	5/06/2009	Fri	700	LB VN1V	303B 375B		R	W	O	F	X	T	R	50				89	
1N/1023/0.65		I	KAPITI ROAD	2854666	7/09/2008	Sun	1635	FE CS1C	351A 386A		R	D	B	F	X	T	P	50					
1N/1023/0.65		I	KAPITI ROAD	2912538	9/08/2009	Sun	930	NC TE2	370A 718B		R	D	B	F	X	T	R	50			1		
1N/1023/0.65		I	KAPITI ROAD	2955508	19/10/2009	Mon	1551	FE BN1C	181A 191B		R	D	O	F	X	T	R	50					
KAPITI ROAD	30	E	SH 1N	2653121	21/06/2006	Wed	830	JO CE1C	120A 922		R	D	B	F	D	N	C	50					
KAPITI ROAD	10	N	SH 1N	2850011	4/01/2008	Fri	1715	KA CS1C	308B 925		R	D	B	F	D	N	C	50					
KAPITI ROAD		I	1N/1023/0.65	2956541	2/12/2009	Wed	1645	MG CS2T	420B		R	D	B	F	X	T	C	50					
KAPITI ROAD		I	1N/1023/0.65	2856450	19/08/2008	Tue	2115	LB CN1C	303B 387B		R	D	DO	F	X	T	R	50					
KAPITI ROAD		I	1N/1023/0.65	2950225	28/01/2009	Wed	624	LB VE1C	303B 387B		R	D	O	F	X	T	C	50					
KAPITI ROAD		I	1N/1023/0.65	2856273	7/12/2008	Sun	142	KB CS1C	103B 322B		R	D	DO	F	X	T	R	50					
1N/1023/0.67	20	S	KAPITI ROAD	2954684	16/09/2009	Wed	720	FE TN1C	181A 387A		R	D	O	F	X	T	R	50					
1N/1023/0.67	25	S	KAPITI ROAD	2654906	3/10/2006	Tue	1710	FD 4N1C	181A 400A 420A		R	D	B	F		N	C	50					
KAPITI LIGHTS	40	W	SH 1N	2952221	7/05/2009	Thu	1145	MO TW1C	386A	M	E	D	O	F		N	C	50					
KAPITI LIGHTS		I	1N/1023/0.746	2954757	18/09/2009	Fri		MO CE1C	102A 355A 371A	M	E	D	DO	F	Y	G	R	50					
1N/1023/0.685	40	S	KAPITI ROAD	2752372	13/04/2007	Fri	1930	DA CN1	103A 130A 205A 920	FI	R	D	DO	F	D	N	R	50				18	
1N/1023/0.695	50	S	KAPITI ROAD	2551491	26/03/2005	Sat	1315	AA CN1C	173A 386A		R	D	B	F		N	P	50					
1N/1023/0.695	50	S	KAPITI ROAD	2612731	3/03/2006	Fri	1705	NA 4N1E	713B		R	D	O	F		N	R	50			1		
1N/1023/0.7	50	S	KAPITI ROAD	2955435	22/10/2009	Thu	1740	FD CN1C	331A 351A		E	D	O	F		N	R	50					
1N/1023/0.745	100	S	KAPITI ROAD	2853705	26/07/2008	Sat	1450	FD CN1C	181A		R	W	O	L		N	C	50					
1N/1023/0.807		I	COASTLANDS PARADE	2550963	10/03/2005	Thu	950	FB CE2C	181A 387A		R	D	O	F	T	G	R	50					29
1N/1023/0.811		I	COASTLANDS PARADE	2550188	23/01/2005	Sun	1716	KA CN1C	302B 404B		R	D	B	F	T	G	R	50					
1N/1023/0.811		I	COASTLANDS PARADE	2612823	17/09/2006	Sun	1646	LB CN1S	303B 375B		R	D	B	F	T	G	R	50			1		
1N/1023/0.811		I	COASTLANDS PARADE	2553750	29/07/2005	Fri	1620	JA VN1C	302B 353B 375B 925		R	D	B	F	D	G	R	50					
1N/1023/0.811		I	COASTLANDS PARADE	2851871	11/04/2008	Fri	1240	KA CN1C	302B 927		R	D	B	F	D	G	R	50					
1N/1023/0.811		I	COASTLANDS PARADE	2955886	29/10/2009	Thu	845	LB CN1C4	303B 387B		R	D	O	F	T	G	R	50					
1N/1023/0.811		I	COASTLANDS PARADE	2652768	15/06/2006	Thu	1040	LB CN1C	303B 375B		R	D	B	F	T	G	P	70					
1N/1023/0.831	20	S	COASTLANDS PARADE	2655689	14/11/2006	Tue	2315	FA CN1V	132A 410A		R	W	DO	L		N	C	50					
1N/1023/1.05	400	S	KAPITI ROAD	2753317	2/03/2007	Fri	710	AC TS1C	371A 671A		R	D	O	F		N	P	70					
1N/1023/1.107		A	MCDONALDS ENT	2513314	1/11/2005	Tue	1750	AA CS1V4V	386A		R	D	O	F		N	L	70		1	1		
1N/1023/1.111	300	S	COASTLANDS PARADE	2850526	19/01/2008	Sat	1500	FD CN1CC	181A 402A		R	D	B	F		N	R	70					
1N/1023/1.111	300	S	COASTLANDS PARADE	2854198	9/08/2008	Sat	1325	JA CN1V	112A 632A 308B 382B 924		R	D	O	F	D	G	C	70					
1N/1023/1.184	200	N	IHAKARA ST	2854363	23/07/2008	Wed	1850	LB CN1C	145A 303B 387B 924		R	W	DO	L	D	N	C	70					
1N/1023/1.284	100	N	IHAKARA ST	2750889	24/02/2007	Sat	2105	FO CS1C	406B 665B 922		R	D	DO	F	D	N	C	100					
1N/1023/1.284	100	N	IHAKARA ST	2757602	11/12/2007	Tue	1536	DB TN1	124A 353A 924	P	R	D	O	F	D	G	C	70				41	
1N/1023/1.284	100	N	IHAKARA ST	2651979	10/05/2006	Wed	1155	CB CN1	132A	P	R	D	O	F		N	C	70					
1N/1023/1.334	50	N	IHAKARA ST	2611747	5/05/2006	Fri	340	NB VS1E	105B 711B 724B		R	D	DO	F		N	P	70			1		
1N/1023/1.334	50	N	IHAKARA ST	2550073	7/01/2005	Fri	2130	EC VS1	370A 911	W	R	D	DO	F		N	L	70					

First Street	Distance	D	I/R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	M D / V R / T 1	VN VVV 234	Factors and Roles (A is for vehicle 1, B is for veh 2 etc)	OBJECT	CURVE	WETNES	LIGHT	WETHER	JUNCTL	CONTRL	MARKS	SPDLMT	Total Inj F	Total Inj S	Total Inj M	PED Age	CYC Age
1N/1023/1.384			I	IHAKARA ST	2755663	18/08/2007	Sat	1615	MG	CE2V	371A		R	D	O	F	T	S	P	50					
1N/1023/1.384			I	IHAKARA ST	2755673	27/09/2007	Thu	1155	JC	CE2CC	302A 377A		R	D	B	F	T	G	R	70					
1N/1023/1.384			I	IHAKARA ST	2653630	5/08/2006	Sat	2305	DB	CN1	111A 430A 514A	I	R	D	DO	F	T	G	C	100					
1N/1023/1.891	200	N		RAUMATI ROAD	2613677	10/12/2006	Sun	1225	CB	CS1	410A	FT	R	D	B	F		N	P	100		1			
1N/1023/1.891	200	N		RAUMATI ROAD	2611839	11/05/2006	Thu	650	MC	CN1M	300B 372B		R	W	DN	L		N	P	100			1		
1N/1023/2.051	40	N		RAUMATI ROAD	2956592	23/12/2009	Wed	1200	AA	CN1C	184A		R	D	B	F		N	R	50					
1N/1023/2.087			I	RAUMATI ROAD	2611836	28/03/2006	Tue	1546	JA	TN1V	302B 375B		R	D	O	F	T	G	P	100			2		
1N/1023/2.087			I	RAUMATI ROAD	2613472	23/05/2006	Tue	1922	DA	CE2C	133A		R	W	DO	H	T	S	P	100			3		
1N/1023/2.087			I	RAUMATI ROAD	2851506	4/04/2008	Fri	245	DB	CS2	135A 801	IS	R	W	O	L	T	G	R	100					
1N/1023/2.087			I	RAUMATI ROAD	2812315	23/06/2008	Mon	1524	LB	4N1C	303B		R	W	O	H	T	G	L	100			1		
1N/1023/2.091			I	RAUMATI ROAD	2513402	28/11/2005	Mon	1222	LB	CS1C	303B		R	D	O	F	T	G	R	100		1	1		
1N/1023/2.091			I	RAUMATI ROAD	2950138	27/01/2009	Tue	1752	BA	CN1C	125A		R	D	O	F	T	S	L	100					
1N/1023/2.091			I	RAUMATI ROAD	2857024	29/10/2008	Wed	818	LB	VN1C	145A 303B 387B		R	D	O	F	T	G	C	100					
1N/1023/2.091			I	RAUMATI ROAD	2812768	23/08/2008	Sat	1027	JA	CN1CB	302B 382B		R	D	O	F	T	G	R	100			1		
1N/1023/2.091			I	RAUMATI ROAD	2956229	24/11/2009	Tue	1043	LB	VN1C	302B 382B		R	D	B	F	T	G	P	100					
1N/1023/2.091			I	RAUMATI ROAD	2913523	23/12/2009	Wed	1015	JA	CN1C	302B 314B		R	D	B	F	T	G	R	100			2		
1N/1023/2.091			I	RAUMATI ROAD	2651155	15/03/2006	Wed	1530	QG	4S1V	665A		R	D	B	F	T	G	R	100					
1N/1023/2.091			I	RAUMATI ROAD	2613521	26/11/2006	Sun	430	CB	CS1	103A 410A	E	R	D	DO	F	T	G	C	100			2		
1N/1023/2.091			I	RAUMATI ROAD	2951372	25/03/2009	Wed	1800	LB	CN1C	303B 375B		R	D	O	F	T	G	C	100					
1N/1023/2.091			I	RAUMATI ROAD	2955028	20/09/2009	Sun	930	JA	CN1C	102B 301B 375B		R	D	O	F	T	S	P	100					
1N/1023/2.091			I	RAUMATI ROAD	2955876	11/11/2009	Wed	1925	LB	CN1C	303B 375B		R	D	TF	F	T	S	P	100					
1N/1023/2.241	150	S		RAUMATI ROAD	2956550	5/12/2009	Sat	1130	FD	CN1C	181A 353A		R	D	B	F		N	C	100					
1N/1023/2.291	200	S		RAUMATI ROAD	2913655	27/12/2009	Sun	1220	FD	CN1CCC	181A		R	W	O	L		N	L	100			1		
1N/1023/2.387	300	S		RAUMATI ROAD	2552342	25/04/2005	Mon	1740	FB	CN1C	181A 191A		R	W	DN	L		N	C	100					
1N/1023/2.441	350	S		RAUMATI ROAD	2950668	16/02/2009	Mon	1700	GF	CS1C	331A 377A 927		R	W	O	L	D	N	P	100					
1N/1023/2.751	400	N		LEINSTER AVENUE	2511005	1/01/2005	Sat	415	CB	CN1	103A 410A	C	R	D	DN	F		N	C	100			2		
1N/1023/3.004	600	N		POPLAR AVENUE	2750713	4/02/2007	Sun	430	AO	4N1C	512A		R	D	DN	F		N	C	100					
1N/1023/3.051	100	N		LEINSTER AVENUE	2753078	6/06/2007	Wed	1821	KA	VN1C	308B 382B 929		R	D	DN	F	D	N	L	100					
1N/1023/3.151			I	LEINSTER AVENUE	2853130	25/06/2008	Wed	1650	FD	CN1CC	331A		R	W	TN	H	T	N	P	100					
1N/1023/3.201	50	S		LEINSTER AVENUE	2612734	10/08/2006	Thu	1627	CB	CS1	132A 197A 402A	E	R	D	O	F		N	L	100			1		
1N/1023/3.308	300	N		POPLAR AVENUE	2951741	10/04/2009	Fri	1211	FD	CN1CC	181A 180C		R	D	B	F		N	L	100					
1N/1023/3.604			I	POPLAR AVENUE	2552772	31/05/2005	Tue	2145	CC	CS1	103A 112A	F	R	D	DO	F	T	S	R	100					
1N/1023/3.604			I	POPLAR AVENUE	2611099	3/01/2006	Tue	1227	LB	CN1C	303B 375B 504B		R	D	B	F	T	S	C	100		1	4		
1N/1023/3.604			I	POPLAR AVENUE	2655742	26/11/2006	Sun	1448	DB	CE2	135A 402A 801 901	V	R	W	O	H	T	G	P	100					
1N/1023/3.608			I	POPLAR AVENUE	2952580	23/05/2009	Sat	1612	DB	CN1	111A 131A	IV	R	W	O	H	T	G	R	100					
POPLAR AVENUE	40	W		SH 1N	2853148	26/06/2008	Thu	1634	CB	CE1	103A	T	R	D	B	F		N	C	80					
POPLAR AVENUE	50	W		SH 1N	2653273	13/05/2006	Sat	1315	CB	CW1	129A 358A 402A	P	R	D	B	F		N	C	100					
POPLAR AVENUE			I	1N/1023/3.604	2750746	3/03/2007	Sat	2337	DB	CS2	103A 121A	V	R	D	DO	F	T	G	C	100					
POPLAR AVENUE			I	1N/1023/3.608	2854451	29/08/2008	Fri	1259	DB	CN2	501A	ST	R	D	B	F	T	N	N	80					
1N/1023/3.808	200	S		POPLAR AVENUE	2912045	26/05/2009	Tue	2155	ED	TN1T	331A 353A 817	GQ	R	D	DO	F		N	R	100			2		
1N/1023/3.904	300	S		POPLAR AVENUE	2555608	6/10/2005	Thu	545	AD	CN1T	129A 410A		R	D	DN	F		N	C	100					45
1N/1023/4.204	600	S		POPLAR AVENUE	2755425	20/09/2007	Thu	1730	AA	4N1C	159A 434A 170B		R	D	B	F		N	R	100					
1N/1023/4.929	500	N		WATERFALL ROAD	2510024	15/03/2005	Tue	600	FA	TS1S	330A 370A		R	D	DN	F		N	C	100	1				
1N/1023/5.062	370	N		WATERFALL ROAD	2850440	4/02/2008	Mon	845	CB	CN1	129A 359A	V	R	D	O	F		N	R	100					
1N/1023/5.129	300	N		WATERFALL ROAD	2755138	8/09/2007	Sat	800	CC	CS1	631A	G	R	D	O	F		N	R	100					
1N/1023/5.209	220	N		WATERFALL ROAD	2754611	31/05/2007	Thu	2114	FA	TS1C	150A 132B 150B		R	D	DN	F		N	R	100					
1N/1023/5.332	100	N		WATERFALL ROAD	2754338	6/08/2007	Mon	755	CB	CN1	135A 823	V	R	W	O	H		N	C	100					
1N/1023/5.332	100	N		WATERFALL ROAD	2511727	27/04/2005	Wed	1058	CC	CN1	130A 400A	GT	R	D	B	F		N	R	100			1		
1N/1023/5.332	100	N		WATERFALL ROAD	2754271	6/08/2007	Mon	745	AD	CN1T	112A 135A 803 823	C	R	W	O	HS		N	C	100					
1N/1023/5.429			I	WATERFALL ROAD	2756094	8/10/2007	Mon	1630	GA	CS1C	181A 191B		R	D	B	F	T	N	C	100					
1N/1023/5.463	30	S		WATERFALL ROAD	2750166	21/01/2007	Sun	1845	AA	4S1C	372A	G	R	W	O	L		N	C	100					
1N/1023/5.483	50	S		WATERFALL ROAD	2513088	19/10/2005	Wed	730	FD	TS1C	197A 331A	G	R	D	B	F		N	R	100			1		
1N/1023/5.608	2000	S		POPLAR AVENUE	2812399	30/05/2008	Fri	1850	AA	CN1C	372A 671A	G	R	D	DO	F		N	R	100			1		
1N/1023/5.636	200	S		WATERFALL ROAD	2753920	18/07/2007	Wed	1415	CB	CN1	112A 132A 137A	P	R	D	B	F		N	R	100					
1N/1023/5.689	1500	N		MCKAYS XING	2851126	10/03/2008	Mon	6	CC	CS1	410A	G	R	D	DO	F		N	R	100					
1N/1023/5.723	290	S		WATERFALL ROAD	2513613	18/11/2005	Fri	1700	CB	MS1	112A 353A	G	R	D	B	F		N	R	100			1		

First Street	Distance	DIR	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	MD VR (T)	Vehicles (M VN VVV 1 234)	Factors and Roles (A is for vehicle 1, D is for veh 2 etc)	OBJECT	CURVE	WETNES	LIGHT	WEATHER	JUNCTION	CNTRL	MARKS	SPDLMT	Total Inj FAT	Total Inj SER	Total Inj MIN	PED age	CYC age
1N/1023/5.833	400	S	WATERFALL ROAD	2611255	10/02/2006	Fri	615	FD	4S1TC	331A	C	R	W	DF	H		N	R	100		2			
1N/1023/5.933	500	S	WATERFALL ROAD	2652648	17/06/2006	Sat	800	CB	VS1	136A 621A	G	R	D	B	F		N	R	100					
1N/1023/5.933	500	S	WATERFALL ROAD	2511756	25/04/2005	Mon	1730	FD	CS1CCC	331A 351A		R	W	DO	L		N	C	100			1		
1N/1023/6.033	600	S	WATERFALL ROAD	2713750	16/10/2007	Tue	615	CB	CS1	501A	TX	R	D	TN	FS		N	R	100			1		
1N/1023/6.194	1000	N	MCKAYS XING	2551394	10/04/2005	Sun	1320	FD	CS1CCC	181A 180C		R	D	B	F		N	C	100					
1N/1023/6.303	870	S	WATERFALL ROAD	2854567	30/08/2008	Sat	430	DA	CS1	103A	G	E	D	DO	F		N	C	100					
1N/1023/6.436	800	N	MCKAYS XING	2551917	25/04/2005	Mon	1828	FD	4S1C	132A 135A 351A 801		R	W	DN	L		N	C	100					

Appendix B

Workshop 1 Output

SECTOR 1

sub options

1A SOUTHERN ROUTE - POPLAR - QE- MACKAYS
on designation (in part)

1B SOUTHERN ROUTE - POPLAR - QE- Raumati Straight
on designation

1C SOUTHERN ROUTE - STH OF SCHOOL

1D MAIN RD ROUTE - 110K ALIGNMENT

1E MAIN RD ROUTE 'MINIMISER'

1F MAIN RD ROUTE NORTH

NOTE:
ALL ROUTES CAN BE RAISED, AT GRADE OR LOWERED
INTERCHANGES CAN BE IN VARIOUS COMBINATIONS

INTERCHANGE

LOCAL ROAD

QE REGIONAL PARK

RAUMATI

Raumati South School

Te Ra Montessori School

semi mature kanuka

wetland

1A

1B

1C

1D

1E

1F

connects to Mackays interchange

N

CONSTRAINT	OPPORTUNITY
SCHOOLS	RELOCATE TE RA SCHOOL
QE PARK	OPTIONS 1D,E,F
PEAT	VIADUCT/BRIDGE 1A
DUNES	OPTIONS 1C,D,E,F
GAS LINE EAST OF RAIL	STAY WEST OF RAIL
ECOLOGY - WET AND VEG	OPTIONS 1D,E,F
RESIDENTIAL AMENITY	KEEP DUNES AS BUFFER
RESIDENTIAL PROPERTIES	1A,B,C
REMNANT VEGETATION	OPTIONS 1D,E,F
CONNECTIVITY EAST WEST	JOIN LEINSTER TO RAUMATI - 1D,E,F

REV 1 ISSUED 28.07.10

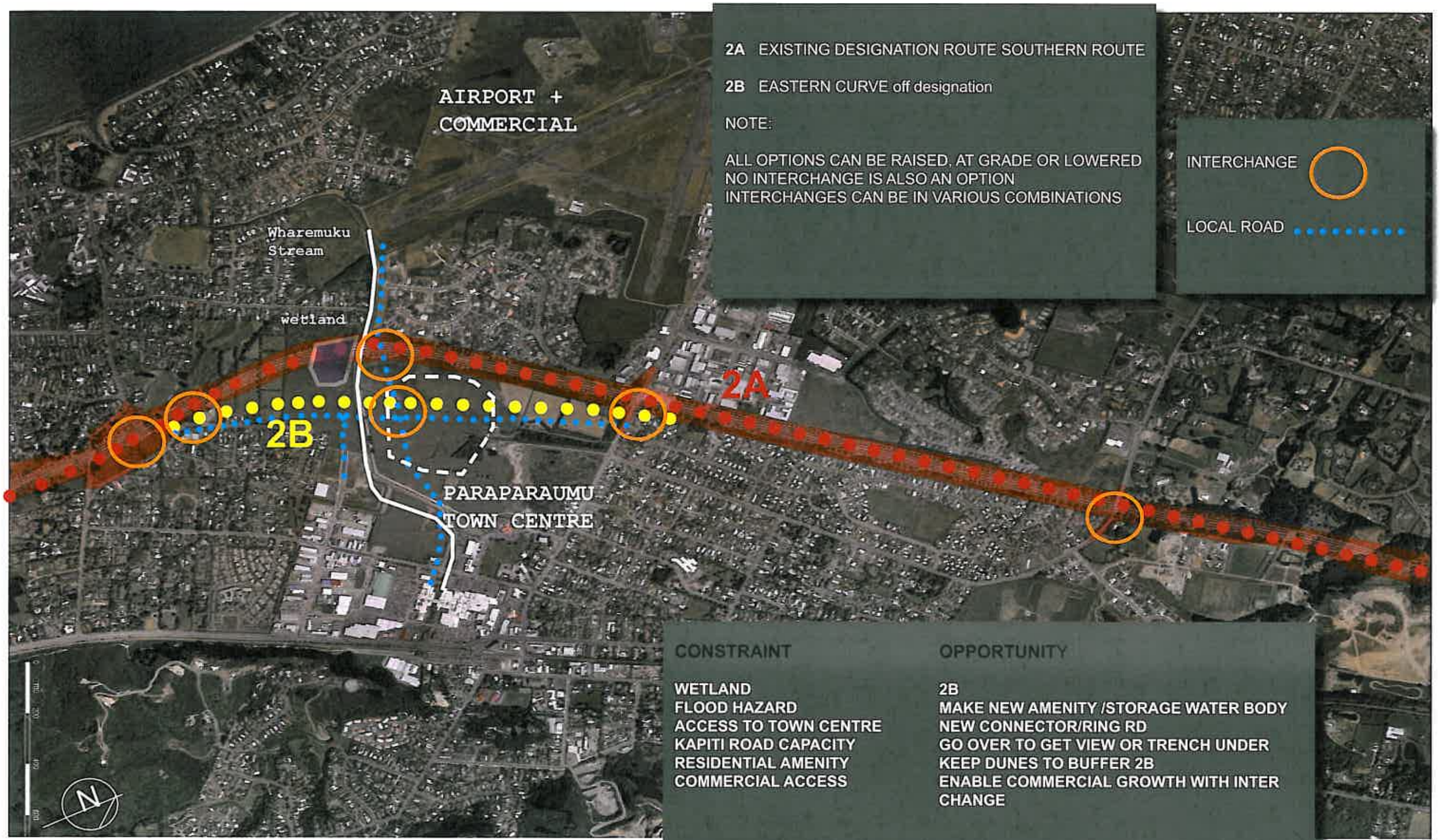
OPTIONS WORKSHOP 1

M2PP
14 JULY 2010 SUMMARY
NOTE PLANS INDICATIVE ONLY

SECTOR 2

sub options

DRAFT



REV 1 ISSUED 28.07.10

M2PP

OPTIONS WORKSHOP 1 14 JULY 2010 SUMMARY

NOTE PLANS INDICATIVE ONLY

DRAFT

sub options

SECTOR 3

3A WESTERN SWEEP
on designation (in part)

3B DESIGNATION - SUB 110K

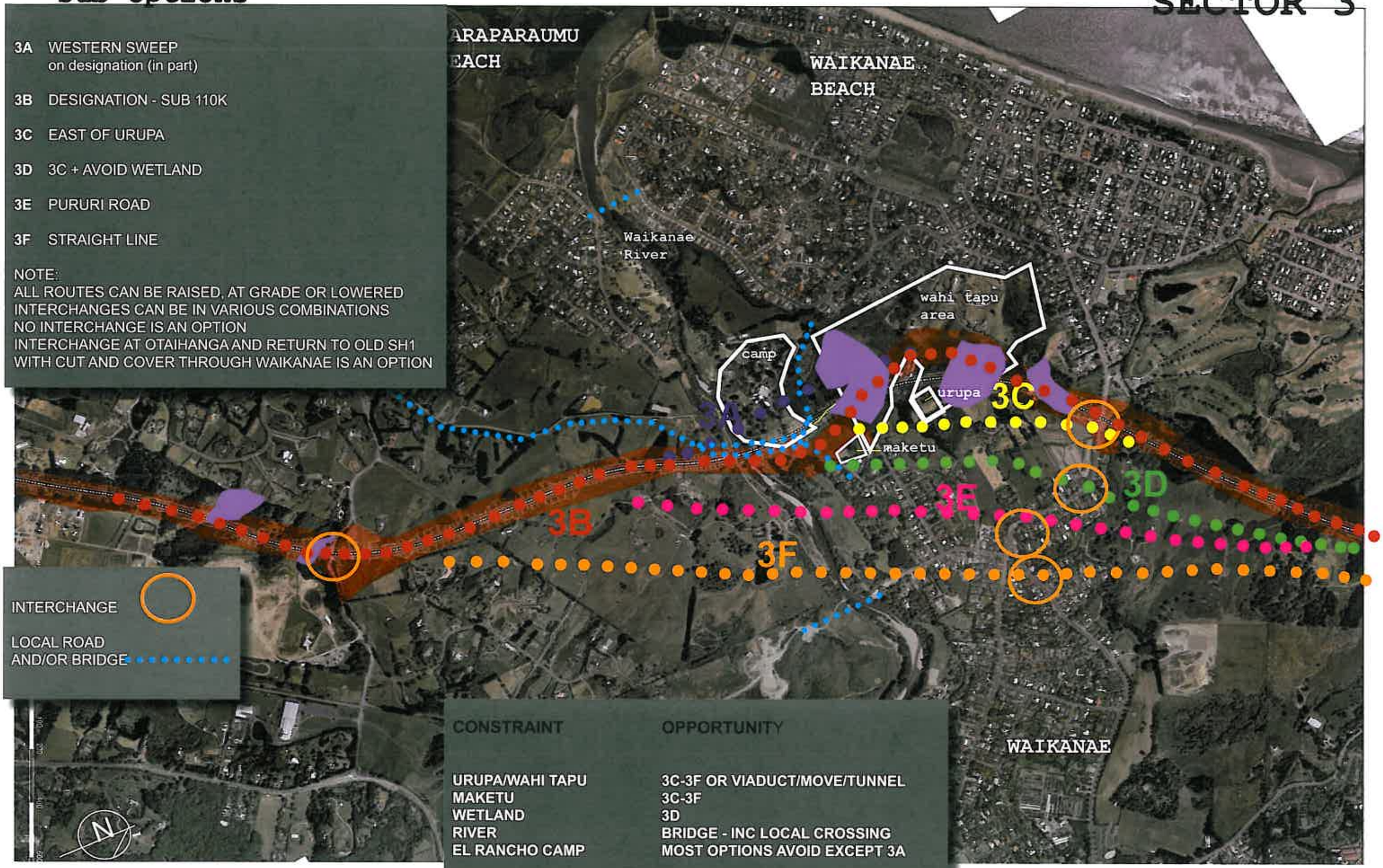
3C EAST OF URUPA

3D 3C + AVOID WETLAND

3E PURURI ROAD

3F STRAIGHT LINE

NOTE:
ALL ROUTES CAN BE RAISED, AT GRADE OR LOWERED
INTERCHANGES CAN BE IN VARIOUS COMBINATIONS
NO INTERCHANGE IS AN OPTION
INTERCHANGE AT OTAIHANGA AND RETURN TO OLD SH1
WITH CUT AND COVER THROUGH WAIKANAE IS AN OPTION



REV 1 ISSUED 28.07.10

M2PP
OPTIONS WORKSHOP 1 14 JULY 2010 SUMMARY
NOTE PLANS INDICATIVE ONLY

DRAFT

sub-options SECTOR 4

Waikanae Beach

Ngarara Farm

4A

4B

4C+4D

approx growth boundary

4A	EXISTING DESIGNATION ROUTE
4B	STRAIGHT LINE
4C+D	URBAN EDGE OPTIONS

NOTE:

ALL OPTIONS CAN BE RAISED, AT GRADE OR LOWERED
NO INTERCHANGE IS ALSO AN OPTION
IF OTAIHANGA INTERCHANGE AND RETURN TO SH1 PRE WAIKANAE THEN UPGRADE TO EXISTING SH1 REQUIRED

INTERCHANGE

CONSTRAINT	OPPORTUNITY
REMNANT COASTAL FOREST	AVOID BY OTHER OPTIONS
WETLANDS	AVOID BY OTHER OPTIONS
NGARARA FARM	REPOSITION ROUTE TO ENABLE GOOD DEVELOPMENT FORM
LAND USE EX GROWTH AREA	LOCATE ROUTE AS EDGE
RURAL LIFESTYLE BLOCKS	

REV 1 ISSUED 28.07.10

M2PP

OPTIONS WORKSHOP 1 14 JULY 2010 SUMMARY

NOTE PLANS INDICATIVE ONLY

Appendix C

Long List Options

Original Long List of Base Options & Sub Options

	Base options	Description
	1	South-facing ramps south of Poplar Ave, north-facing ramps at Peka Peka.
	1A	South-facing ramps south of Poplar Ave, local crossing at Weggery Dr, north-facing ramps at Peka Peka.
	2	South-facing ramps south of Poplar Ave, full interchange at Otaihanga Road, north-facing ramps at Peka Peka.
	2A	South-facing ramps south of Poplar Ave, full interchange at Otaihanga Road, local crossing at Weggery Dr, north-facing ramps at Peka Peka.
	2B	South-facing ramps south of Poplar Ave, north-facing ramps at Peka Peka. Interchages at Kapiti Road.
	3	South-facing ramps south of Poplar Ave, north-facing ramps at Peka Peka. Interchanges at Kapiti Road and Te Moana Road.
	3A	South-facing ramps south of Poplar Ave, north-facing ramps at Peka Peka. Local crossing at Weggery Drive. Full Interchages at Kapiti Road and Te Moana Road.
	3B	South-facing ramps south of Poplar Ave, north-facing ramps at Peka Peka. Full interchnages at Ihakara Street extension and Te Moana Road.
	3C	South-facing ramps south of Poplar Ave, north-facing ramps at Peka Peka. Full interchange at Te Moana Road. Split interchange, with south facing ramps at Ihakara Street extension and north facing ramps at Kapiti Road with one way auxillary lanes for local traffic.
	3D	South-facing ramps south of Poplar Ave, north-facing ramps at Peka Peka. Full interchange at Te Moana Road. Split interchange with south facing ramps Raumati Road and north facing ramps Kapiti Road. One way auxillary lanes for local traffic.
	3E	South-facing ramps south of Poplar Ave, north-facing ramps at Peka Peka. North-facing ramps at Poplar Ave. Full interchage at Kapiti Road. Full interchange Te Moana Road.
	3F	South-facing ramps south of Poplar Ave. Full interchage at Kapiti Road. Full interchange Te Moana Road. Full interchange at Peka Peka
Sub-options by Sector		**Sector 1**
Base Options	**Sub-option**	
1--3	S1A	Southern tie-in at MacKays Crossing
1--3	S1Bi	South facing/north facing ramps south of Poplar Ave with additional local road tie-in. Alignment located west of the Steiner School (located within existing designation)
1--3	S1Bii	South facing/north facing ramps at relocated Poplar Ave with additional local road tie-in. Alignment located west of the Steiner School (located within existing designation)
1--3	S1Ci	South facing/north facing ramps south of Poplar with additional local road tie-in. Alignment located east of the Steiner School.
1--3	S1Ciii	South facing ramps , including local road over bridge in QE park. Alignment located east of Steiner school
1--3	S1Di	Ties in north of Poplar Ave. South facing ramps. (this option includes variations 1E and 1F).
1--3	S1Dii	Ties in north of Poplar Road. Interchange on local road between Main Road and Poplar Ave.
		Sector 2
3C	S2Ai	Follow existing designation through this section. With or without Interchange at extended Ihakara Street
3D	S2Aii	Follows existing designation. South facing ramps at Raumati Road and north facing ramps at Kapiti Road. One way auxillary lanes for local traffic - as per Option 7.
2--3	S2Aiii	Follows existing designation. Interchange at Mazengarb Road.
3C	S2Bi	Alignment east of existing designation . With or without Interchange at extended Ihakara Street.
		Sector 3
1--3	S3Ai	Follows existing designation apart from where alignment crosses river further west of current designation (via El Rancho camp and wetlands). Reconnects with existing designation at wahi tapu area.
3	S3B	Follows existing designation. Possible interchange at Otaihanga Road & interchange at Te Moana Road.
3	S3C	Crosses river via existing designation - east of urupa, west of Maketu (straighter north/south alignment). Possible interchange at Otaihanga Road & interchange at Te Moana Road.
1--3	S3D	Crosses river via existing designation - east of urupa and Maketu. Possible interchange at Otaihanga Road & interchange at Te Moana Road.
1--3	S3E	Crosses river east of current designation, straighter north/south alignment. East of urupa/maketu. Interchange at realigned Te Moana Road.
1--3	S3F	Straight line alignment from Otaihanga (near Peka Peka). Possible interchange at Otaihanga Road & interchange at Te Moana Road.
1,2	S3G	Local road crossing of river near WLR designation
		Sector 4
1--3	S4A	Follow existing designation. North facing ramps at Peka Peka.
1--3	S4Ai	Follow existing designation north of Smith field Road. North facing ramps at Peka Peka.
1--3	S4B	Straight line alignment from Otaihanga. North facing ramps at Peka Peka.
1--3	S4C	Alignment close to urban growth boundary. North facing ramps at SH1 (south of Peka Peka).
1--3	S4D	Deviates from the designation south of urban growth edge and ties into existing highway 2km south of Peka Peka

KAPITI RD
MAZENGARB RD
STATE HIGHWAY 1
IHAKARA ST EXTENSION
RAUMATI RD
SECTOR 2
SECTOR 3
OTAIHANGA RD
TE MOANA RD
SECTOR 1
SECTOR 2
NGARARA RD
SMITHFIELD RD.
PEKA PEKA RD.
GREENHILL RD.
POPLAR AVE.

SOUTHERN SH 1 CONNECTION
SOUTH-FACING RAMPS
SOUTH OF POPLAR AVE

NORTHERN SH 1 CONNECTION
NORTH-FACING RAMPS
AT PEKA PEKA ROAD

LEGEND
- EXISTING LOCAL ROAD
- FUTURE LOCAL ROAD
- PROPOSED EXPRESSWAY ROUTE
- PROPOSED EXPRESSWAY WAY INTERCHANGES
- NEW WAIKANAE RIVER CROSSING
- DESIGNATION BOUNDARY

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	MBC	[illegible]		12.07.10

Original Scale (A1) 1:20,000	Design	EW	28.07.10
Reduced Scale (A3) 1:40,000	Drawn	MBC	28.07.10
	Dsg Verifier		
	Dsg Check	[illegible]	30/7
	* Refer to Revision 1 for Original Signature		

Approved For Issue* Date

NZ TRANSPORT AGENCY WAKA KOTAHI

Mackays to Peka Peka

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

Title: OPTION 1

Discipline: CIVIL

Drawing No: 3320901-CK90

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

KAPITI RD
MAZENGARB RD.
STATE HIGHWAY 1
IHAKARA ST EXTENSION
RAUMATI RD.
SECTOR 2
SECTOR 3
OTAIHANGA RD.
TE MOANA RD.
SECTOR 2
SECTOR 1
POPLAR AVE.
NEW WAIKANAE RIVER CROSSING
CONNECTION BETWEEN
WAIKANAE BEACH
AND PARAPARAUMU BEACH
FROM WEGGERY DRIVE TO MAKORA ROAD
NGARARA RD.
SECTOR 3
SECTOR 4
SMITHFIELD RD.
PEKA PEKA RD.
GREENHILL RD.

SOUTHERN SH 1 CONNECTION
SOUTH-FACING RAMPS
SOUTH OF POPLAR AVE

NORTHERN SH 1 CONNECTION
NORTH-FACING RAMPS
AT PEKA PEKA ROAD

LEGEND
- EXISTING LOCAL ROAD
- FUTURE LOCAL ROAD
- PROPOSED EXPRESSWAY ROUTE
- PROPOSED EXPRESSWAY WAY INTERCHANGES
- NEW WAIKANAE RIVER CROSSING
- DESIGNATION BOUNDARY

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	MBC			12.07.10

Original Scale (A1) 1:20,000	Design	EW	28.07.10
	Drawn	MBC	28.07.10
Reduced Scale (A3) 1:40,000	Dsg Verifier		
	Dwg Check		30/7
	* Refer to Revision 1 for Original Signature		Date

Approved For Issue*

NZ TRANSPORT AGENCY WAKA KOTAHI

Mackays to Peka Peka

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

Title: OPTION 1A

Discipline: CIVIL

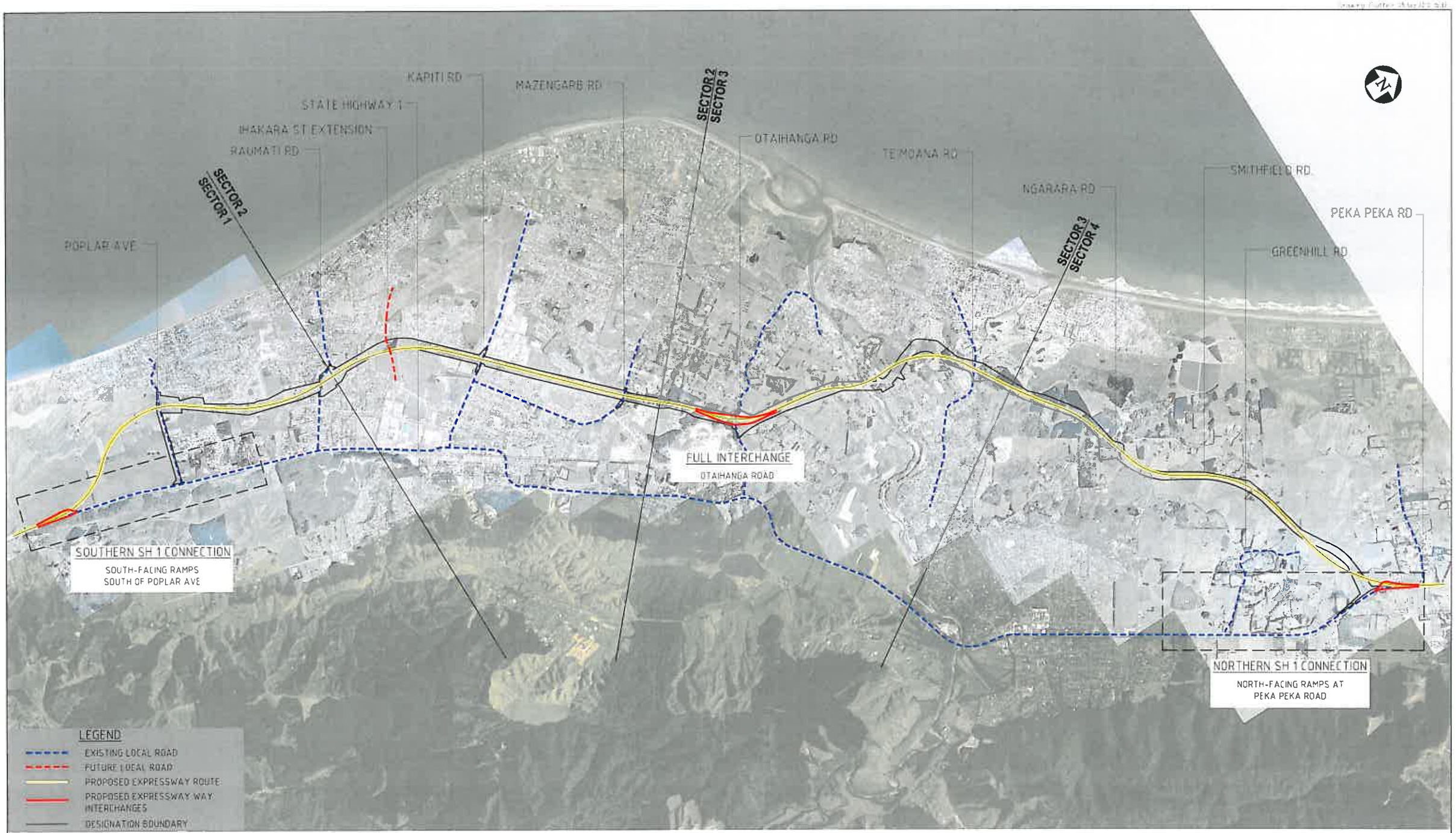
Drawing No: 3320901-CK91

Rev: A

CAD FILE PATH: P:\332\320901\CAD\3320901-CK91.DWG

DO NOT SCALE

IF IN DOUBT ASK



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	MBL			27.07.10

Original Scale (A1) 1:20,000 | Design EW | 27.07.10 | Approved for Issue
Drawn MBL | 27.07.10
Dsn verified
Dwg Checked
Received Scale (A3) 1:40,000 | * Refer to Revision 1 for Original Signature | Date

NZ TRANSPORT AGENCY waka kotahi

Mackays to Peka Peka

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

Title: OPTION 2

Discipline: CIVIL
Drawing No: 3320901-CK92
Rev: A

DO NOT SCALE

KAPITI RD

MAZENGARB RD

SECTOR 2
SECTOR 3

STATE HIGHWAY 1

IHAKARA ST EXTENSION

RAUMATI RD

OTAIHANGA RD

TE MOANA RD

SECTOR 2
SECTOR 1

NEW WAIKANAE RIVER CROSSING

CONNECTION BETWEEN
WAIKANAE BEACH
AND PARAPARAUMU BEACH
FROM WEGGERY DRIVE TO MAKORA ROAD

NGARARA RD

SECTOR 3
SECTOR 4

SMITHFIELD RD

PEKA PEKA RD

POPLAR AVE

GREENHILL RD

FULL INTERCHANGE

OTAIHANGA ROAD

SOUTHERN SH 1 CONNECTION

SOUTH-FACING RAMPS
SOUTH OF POPLAR AVE

NORTHERN SH 1 CONNECTION

NORTH-FACING RAMPS
AT PEKA PEKA ROAD

LEGEND

- EXISTING LOCAL ROAD
- FUTURE LOCAL ROAD
- PROPOSED EXPRESSWAY ROUTE
- PROPOSED EXPRESSWAY WAY INTERCHANGES
- NEW WAIKANAE RIVER CROSSING
- DESIGNATION BOUNDARY

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	MBC			28.07.10

Original Size (A1) 1:20,000
Reduced Size (A3) 1:40,000

Design	EW	28.07.10	Approved For
Drawn	MBC	28.07.10	
Dsg. Verifier			
Dwg. Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

Mackays to Peka Peka

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

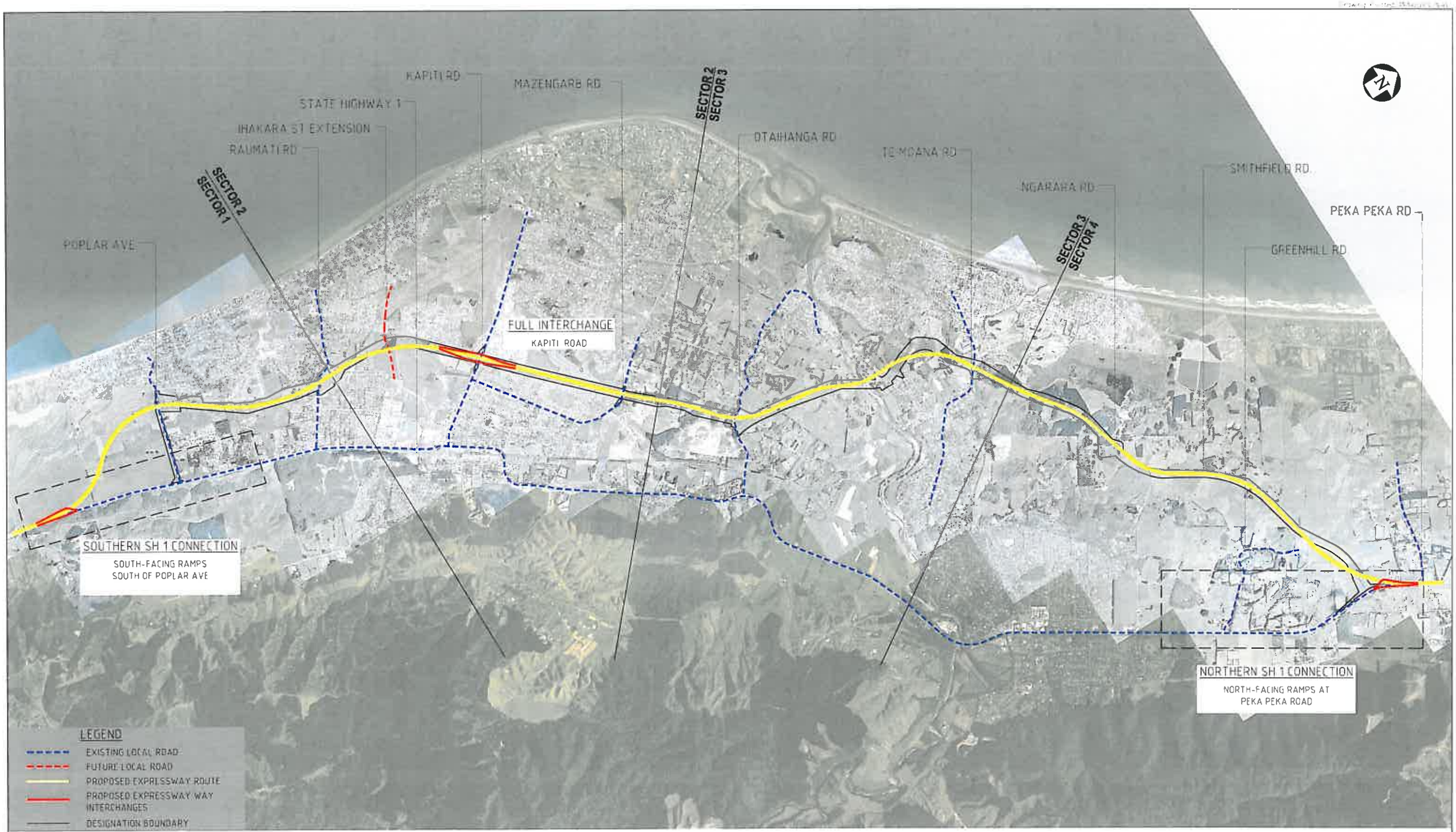
Title: OPTION 2A

Discipline: CIVIL

Drawing No: 3320901-CK93

Rev: A

DO NOT SCALE



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	MBC			28.07.10

Original Scale (A1) 1:20,000	Design EW	28.07.10	Approved for Issue
	Draw MBC	28.07.10	
Reduced Scale (A3) 1:40,000	Dwg Verified		
	Dwg Check	Date	
	* Refer to Revision for Original Signature		

NZ TRANSPORT AGENCY

Mackays to Peka Peka

Project	SH1 REALIGNMENT MACKAYS TO PEKA PEKA RP 1012/0.00 TO 1023/5.00
Title	OPTION 2B
Discipline	CIVIL
Drawing No	3320901-CK94
Rev	A

DO NOT SCALE

KAPITI RD
MAZENGARB RD
STATE HIGHWAY 1
INAKARA ST EXTENSION
RAUMATI RD
SECTOR 2
SECTOR 3
OTAIHANGA RD
TE MOANA RD
SMITHFIELD RD
NGARARA RD
PEKA PEKA RD
SECTOR 2
SECTOR 1
SECTOR 3
SECTOR 4
POPLAR AVE
GREENHILL RD

FULL INTERCHANGE
KAPITI ROAD

FULL INTERCHANGE
TE MOANA ROAD

SOUTHERN SH 1 CONNECTION
SOUTH-FACING RAMPS
SOUTH OF POPLAR AVE

NORTHERN SH 1 CONNECTION
NORTH-FACING RAMPS AT
PEKA PEKA ROAD

LEGEND
- EXISTING LOCAL ROAD
- FUTURE LOCAL ROAD
- PROPOSED EXPRESSWAY ROUTE
- PROPOSED EXPRESSWAY WAY INTERCHANGES
- DESIGNATION BOUNDARY

No	Revision	By	Chk	Date
A	FOR INFORMATION	MBC		28.07.10

Original Scale (A1): 1:20,000
Reduced Scale (A3): 1:40,000

Design	EW	28.07.10	Approved For Issue*
Drawn	MBC	28.07.10	
Dwg Verified			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: OPTION 3

Discipline: CIVIL

Drawing No: 3320901-CK95

Rev: A

DO NOT SCALE

KAPITI RD
MAZENGARB RD
STATE HIGHWAY 1
MAKARA ST EXTENSION
RAUMATI RD
SECTOR 2
SECTOR 3
OTAIHANGA RD
TE MOANA RD
SMITHFIELD RD
NGARARA RD
SECTOR 1
SECTOR 2
SECTOR 3
SECTOR 4
PEKA PEKA RD
POPLAR AVE
GREENHILL RD

NEW WAIKANAE RIVER CROSSING
CONNECTION BETWEEN WAIKANAE BEACH AND PARAPARAUMU BEACH FROM WEGGERY DRIVE TO MAKORA ROAD

FULL INTERCHANGE
KAPITI ROAD

FULL INTERCHANGE
TE MOANA ROAD

SOUTHERN SH 1 CONNECTION
SOUTH-FACING RAMPS
SOUTH OF POPLAR AVE

NORTHERN SH 1 CONNECTION
NORTH-FACING RAMPS AT
PEKA PEKA ROAD

LEGEND
- EXISTING LOCAL ROAD
- FUTURE LOCAL ROAD
- PROPOSED EXPRESSWAY ROUTE
- PROPOSED EXPRESSWAY WAY INTERCHANGES
- NEW WAIKANAE RIVER CROSSING
- DESIGNATION BOUNDARY

No	Revision	By	Chk	Date
A	FOR INFORMATION	MBC		28.07.10

Original Scale (A1): 1:20,000
Reduced Scale (A3): 1:40,000

Design	EW	28.07.10	Approved For Issue*
Drawn	MBC	28.07.10	
Dsn Verifier			
Dwg Check			Date

* refer to Revision 1 for Original Signature

DO NOT SCALE

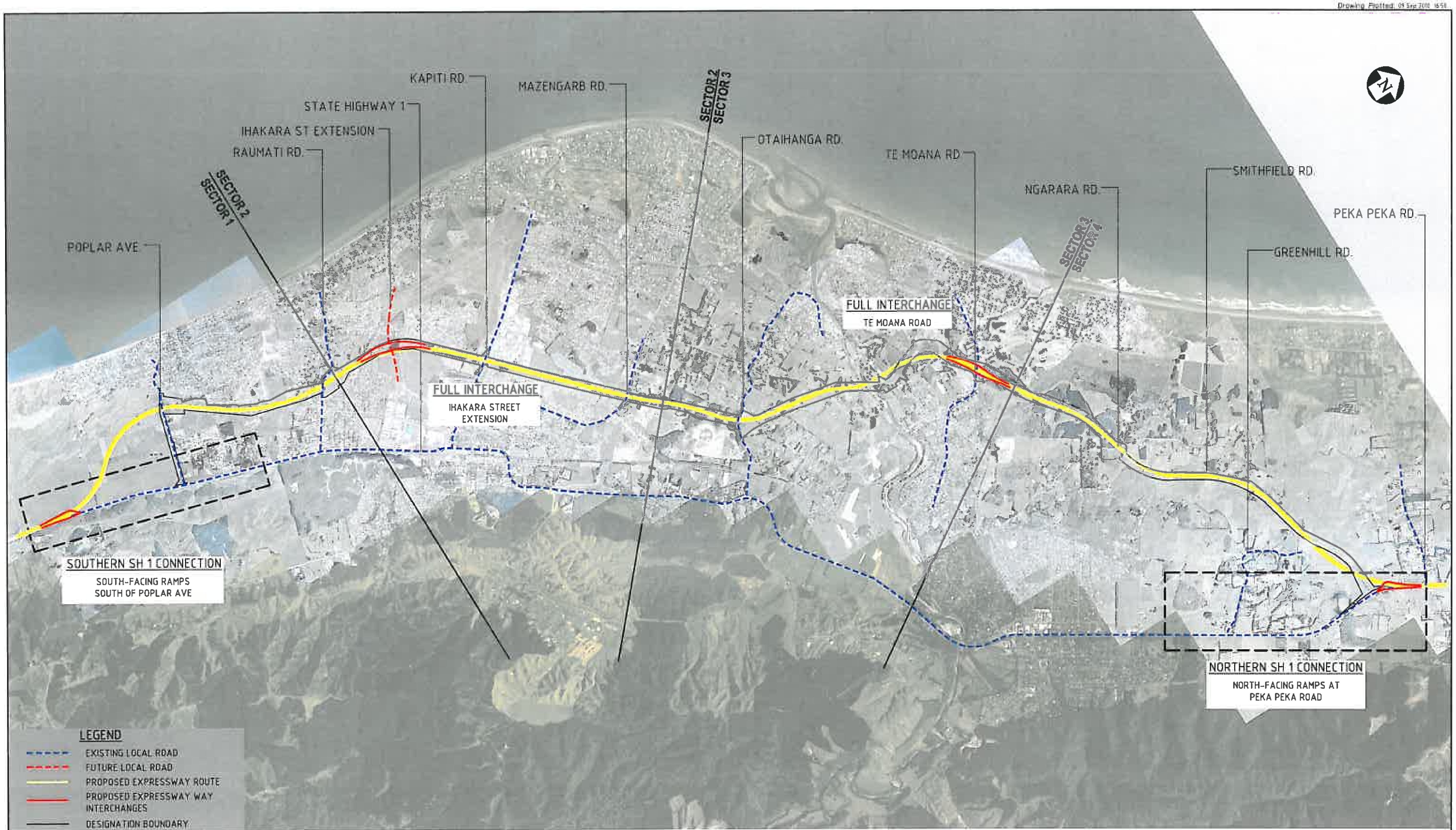
NZ TRANSPORT AGENCY
Mackays to Peka Peka

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

Title: OPTION 3A

Discipline: CIVIL
Drawing No: 3320901-CK96
Rev: A

Drawing Plotted: 09 Sep 2010 16:58



No	Revision	By	Chk	Appd	Date
MBC	FOR INFORMATION	CRC			28.07.10

Original Scale (A1) 1:20,000	Design	EW	28.07.10	Approved For Issue*
Reduced Scale (A3) 1:40,000	Drawn	MBC	28.07.10	
	Dsg Verifier			
	Dwg Check			Date
* Refer to Revision 1 for Original Signature				

NZ TRANSPORT AGENCY

1 Mackays to Peka Peka

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

Title: OPTION 3B

Discipline: CIVIL

Drawing No: 3320901-CK97

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

KAPITI RD
MAZENGARB RD
STATE HIGHWAY 1
IHAKARA ST EXTENSION
RAUMATI RD
SECTOR 2
SECTOR 3
OTAIHANGA RD
TE MOANA RD
NGARARA RD
SECTOR 2
SECTOR 1
SECTOR 3
SECTOR 4
SMITHFIELD RD
PEKA PEKA RD
POPLAR AVE
GREENHILL RD

SPLIT INTERCHANGE
IHAKARA STREET EXTENSION AND KAPITI ROAD

FULL INTERCHANGE
TE MOANA ROAD

SOUTHERN SH 1 CONNECTION
SOUTH-FACING RAMPS SOUTH OF POPLAR AVE

NORTHERN SH 1 CONNECTION
NORTH-FACING RAMPS AT PEKA PEKA ROAD

LEGEND
- EXISTING LOCAL ROAD
- FUTURE LOCAL ROAD
- PROPOSED EXPRESSWAY ROUTE
- PROPOSED EXPRESSWAY WAY INTERCHANGES
- DESIGNATION BOUNDARY

No	Revision	By	Chk	Dsgn	Date
A	FOR INFORMATION	MBC	MW	EW	27.07.10

Original Scale (A1) 1:20,000	Design	EW	27.07.10	Approved For "Issue"
	Draw	MBC	27.07.10	
Reduced Size (A3) 1:40,000	Dsg Verifier			
	Dwg Check	MW	30/7	Date
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY

Mackays to Peka Peka

Project	SH1 REALIGNMENT MACKAYS TO PEKA PEKA RP 1012/0.00 TO 1023/5.00
Title	OPTION 3C
Discipline	CIVIL
Drawing No	3320901-CK98
Rev	A

DO NOT SCALE

Drawing Plotted: 04 Sep 2018 16:55

KAPITI RD

MAZENGARB RD

SECTOR 2
SECTOR 3

STATE HIGHWAY 1

IHAKARA ST EXTENSION

RAUMATI RD.

OTAIHANGA RD.

TE MOANA RD.

NGARARA RD.

SECTOR 2
SECTOR 1

SECTOR 3
SECTOR 4

SMITHFIELD RD.

PEKA PEKA RD.

POPLAR AVE.

GREENHILL RD.

SPLIT INTERCHANGE
RAUMATI ROAD
AND
KAPITI ROAD

FULL INTERCHANGE
TE MOANA ROAD

SOUTHERN SH 1 CONNECTION
SOUTH-FACING RAMPS
SOUTH OF POPLAR AVE

NORTHERN SH 1 CONNECTION
NORTH-FACING RAMPS AT
PEKA PEKA ROAD

LEGEND
- EXISTING LOCAL ROAD
- FUTURE LOCAL ROAD
- PROPOSED EXPRESSWAY ROUTE
- PROPOSED EXPRESSWAY WAY INTERCHANGES
- DESIGNATION BOUNDARY

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	MBC			27.07.10

Original Scale (A1) 1:20,000	Design	EW	27.07.10
	Drawn	MBC	27.07.10
Reduced Scale (A3) 1:40,000	Dsg. Verifier		
	Dwg. Check		

Approved For Issue* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: OPTION 3D

Discipline: CIVIL

Drawing No: 3320901-CK99

Rev: A

CAD FILE PATH: P:\3320901\CAD\3320901-CK99-1.DWG

DO NOT SCALE

IF IN DOUBT ASK

KAPITI RD
MAZENGARB RD
STATE HIGHWAY 1
IHAKARA ST EXTENSION
RAUMATI RD
SECTOR 2
SECTOR 3
OTAIHANGA RD
TE MOANA RD
NGARARA RD
SMITHFIELD RD
PEKA PEKA RD
SECTOR 2
SECTOR 1
POPLAR AVE
SECTOR 3
SECTOR 4
GREENHILL RD

POPLAR AVE CONNECTION
NORTH-FACING RAMPS
AT POPLAR AVE

FULL INTERCHANGE
KAPITI ROAD

FULL INTERCHANGE
TE MOANA ROAD

SOUTHERN SH 1 CONNECTION
SOUTH-FACING RAMPS
SOUTH OF POPLAR AVE

NORTHERN SH 1 CONNECTION
NORTH-FACING RAMPS AT
PEKA PEKA ROAD

LEGEND
- EXISTING LOCAL ROAD
- FUTURE LOCAL ROAD
- PROPOSED EXPRESSWAY ROUTE
- PROPOSED EXPRESSWAY WAY INTERCHANGES
- DESIGNATION BOUNDARY

No	Revision	By	Drn	Chkd	Date
A	FOR INFORMATION	MBL			28 07 10

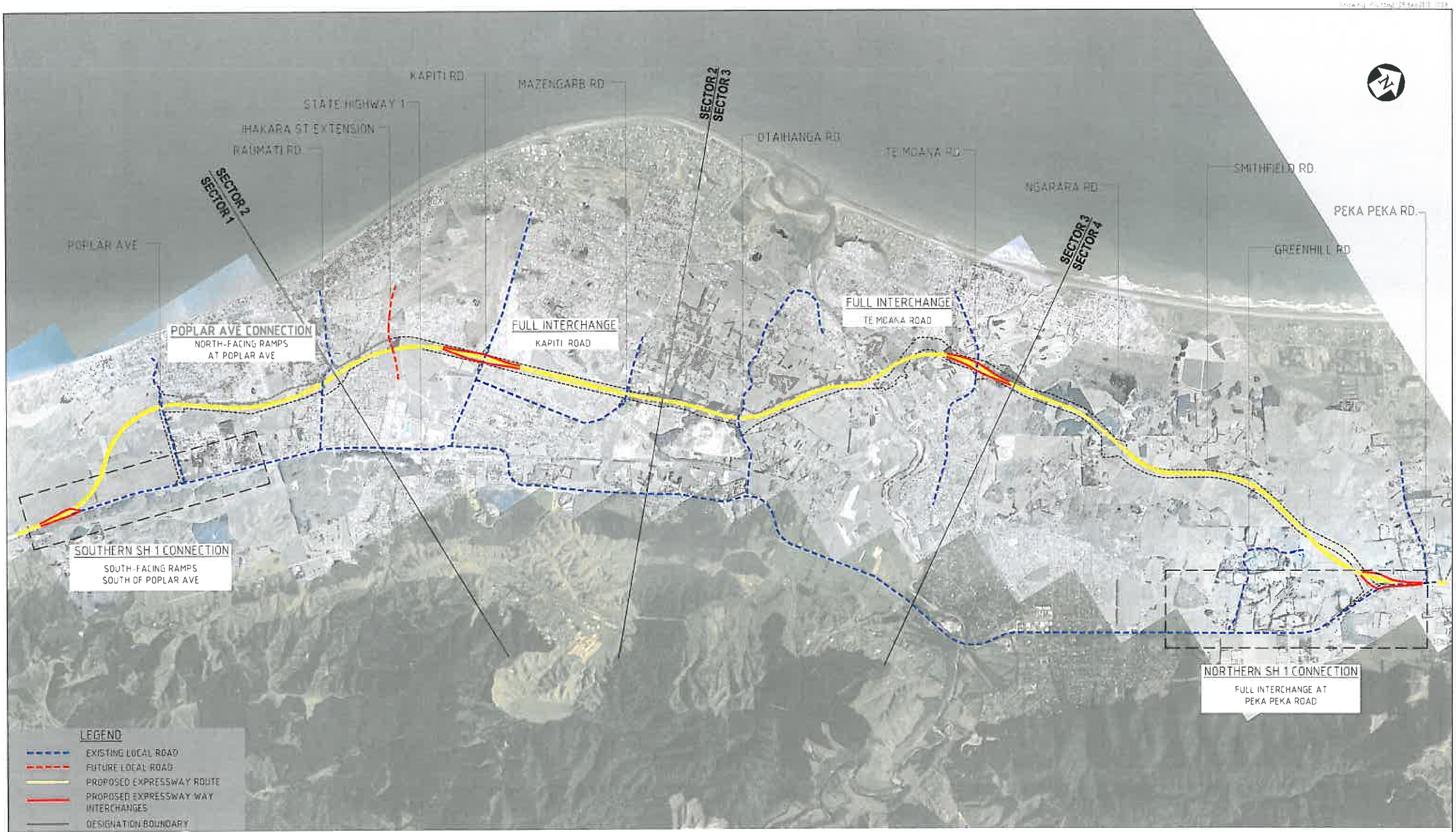
Original Scale (A1) 1:20,000	Design	EW	28 07 10	Approved for ISSUE*
Reduced Scale (A3) 1:40,000	Drawn	MBL	28 07 10	
	Dsg Verifier			
	Dwg Check		30/9	
	* Refer to Revision 1 for Original Signature			Date

NZ TRANSPORT AGENCY WAKA KOTAHI

Mackays to Peka Peka

Project	SH1 REALIGNMENT MACKAYS TO PEKA PEKA RP 1012/0.00 TO 1023/5.00
Title	OPTION 3E
Discipline	CIVIL
Drawing No	3320901-CK100
Rev	A

DO NOT SCALE



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	MBC			28 07 10

Original Scale (A1) 1:20,000	Design	EW	28 07 10
Reduced Scale (A3) 1:40 000	Drawn	MBC	28 07 10
	Dsg Verifier		
	Dsg Check		

Approved For Issue*
Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

Project: SH1 REALIGNMENT
MACKAYS TO PEKA PEKA
RP 1012/0 00 TO 1023/5 00

Title: OPTION 3F

Discipline: CIVIL

Drawing No: 3320901-CK101

Rev: A

DO NOT SCALE

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	AJJ			17.08.10

Original Scale (A1) 1:5000
Reduced Scale (A3) 1:10,000

Design	WTP		Approved For Issue*
Drawn	CRC	17.08.10	
Dsg. Verifier			
Dsg. Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 1
SUBOPTIONS S1A
SOUTHERN TIE-IN AT MCKAYS XING

Discipline: CIVIL

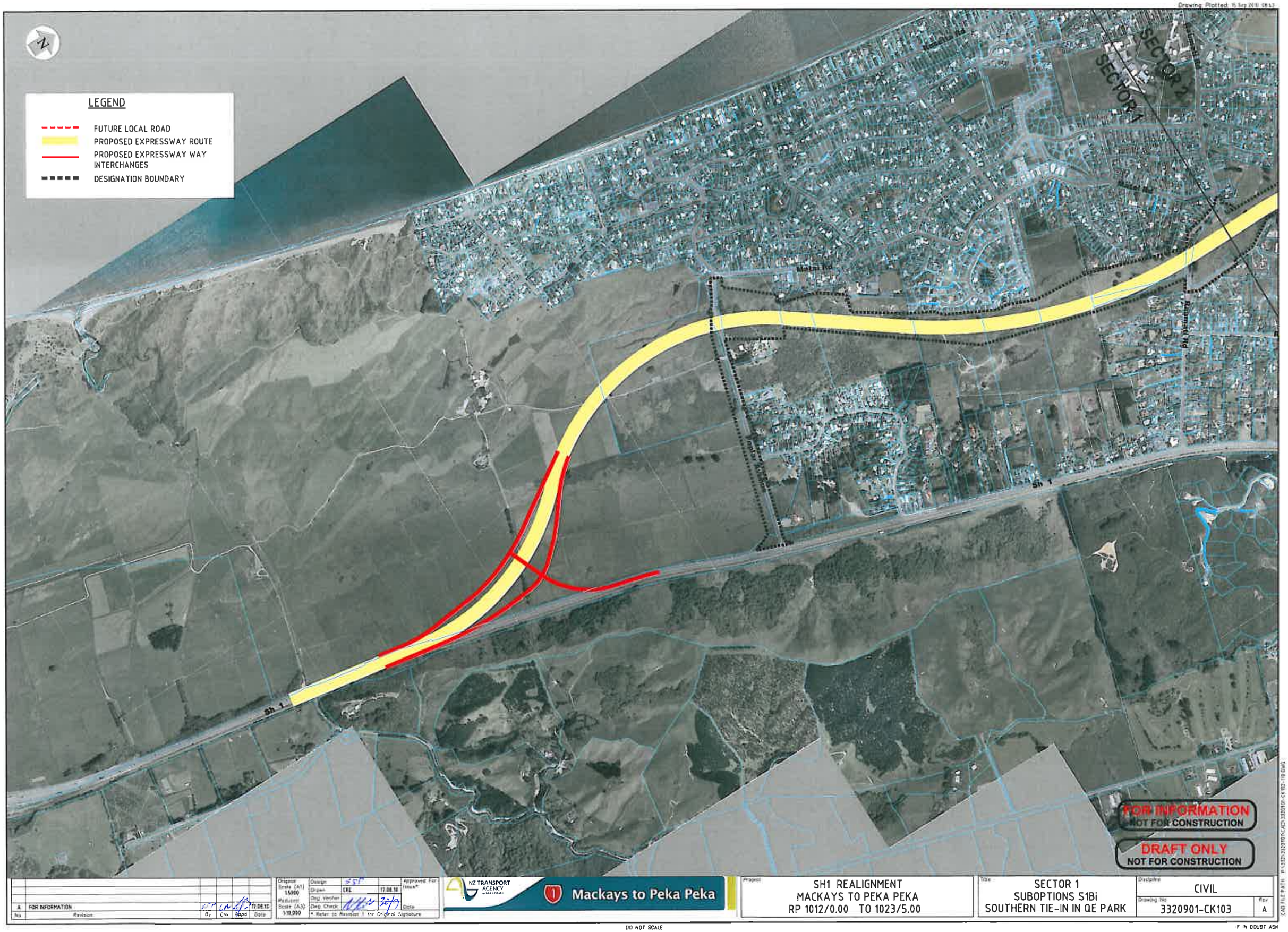
Drawing No: 3320901-CK102

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 15 Sep 2010 08:43



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1): 1:5000
Reduced Scale (A3): 1:10,000
Design: SST
Drawn: CRL 17.08.10
Dwg Verified:
Dwg Check:
Approved For Issue*: Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 1
SUBOPTIONS S1Bi
SOUTHERN TIE-IN IN QE PARK

Discipline: CIVIL

Drawing No: 3320901-CK103

Rev: A

CAD FILE PATH: P:\3320\3320901\CAD\3320901-CK102-103.DWG

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 15 Sep 2010 08:43

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	SJP	NN		17.08.10

Original Scale (A1) 1:5000	Design	SJP		Approved For Issue*
	Drawn	CRC	17.08.10	
Reduced Scale (A3) 1:10,000	Dwg Verifier			
	Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 1
SUBOPTIONS S1Bii
SOUTH FACING RAMPS POPLAR AVE

Discipline: CIVIL

Drawing No: 3320901-CK104

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 15 Sep 2010 08:43

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	SJP			17.08.10

Original Scale (A1) 1:5000
Reduced Scale (A3) 1:10,000

Design: SJP
Drawn: CRC 11.08.10
Dsg Verifier
Dsg Check
Approved For Issue*
Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY
Mackays to Peka Peka

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

Title: SECTOR 1
SUBOPTIONS S1Biii
SOUTH FACING RAMPS SH 1

Discipline: CIVIL
Drawing No: 3320901-CK105
Rev: A

DO NOT SCALE
IF IN DOUBT ASK

Drawing Plotted: 20 Sep 2018 09:38

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	SSF			17.08.18

Origins Scale (A1) 1:5000	Design: SSF		Approved For Issue*
	Drawn: CRC	17.08.18	
Reduced Scale (A3) 1:10,000	Dsg. Verifier:		
	Dwg. Check:	Date	

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

Project	SH1 REALIGNMENT MACKAYS TO PEKA PEKA RP 1012/0.00 TO 1023/5.00
Title	SECTOR 1 SUBOPTIONS S1Ci SOUTHERN TIE-IN IN QE PARK
Discipline	CIVIL
Drawing No	3320901-CK106
Rev	A

DO NOT SCALE

IF IN DOUBT ASK

CAD FILE PATH: P:\3320901\Cad\3320901-CK106.dwg

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:5000 — Reduced Scale (A3) 1:10,000

NZ TRANSPORT AGENCY — Mackays to Peka Peka

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

Title: SECTOR 1
SUBOPTIONS S1Cii
SOUTH FACING RAMPS POPLAR

Discipline: CIVIL

Drawing No: 3320901-CK107 Rev: A

DO NOT SCALE

Drawing Plotted: 15 Sep 2010 10:44

No.	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:5000 · Reduced Scale (A3) 1:10,000
Design: S3P · Drawn: CHC 17.08.10 · Dsg Verifier · Dsg Check · Approved For Issue* · Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 1
SUBOPTIONS S1Ciii
SOUTH FACING RAMPS SH 1

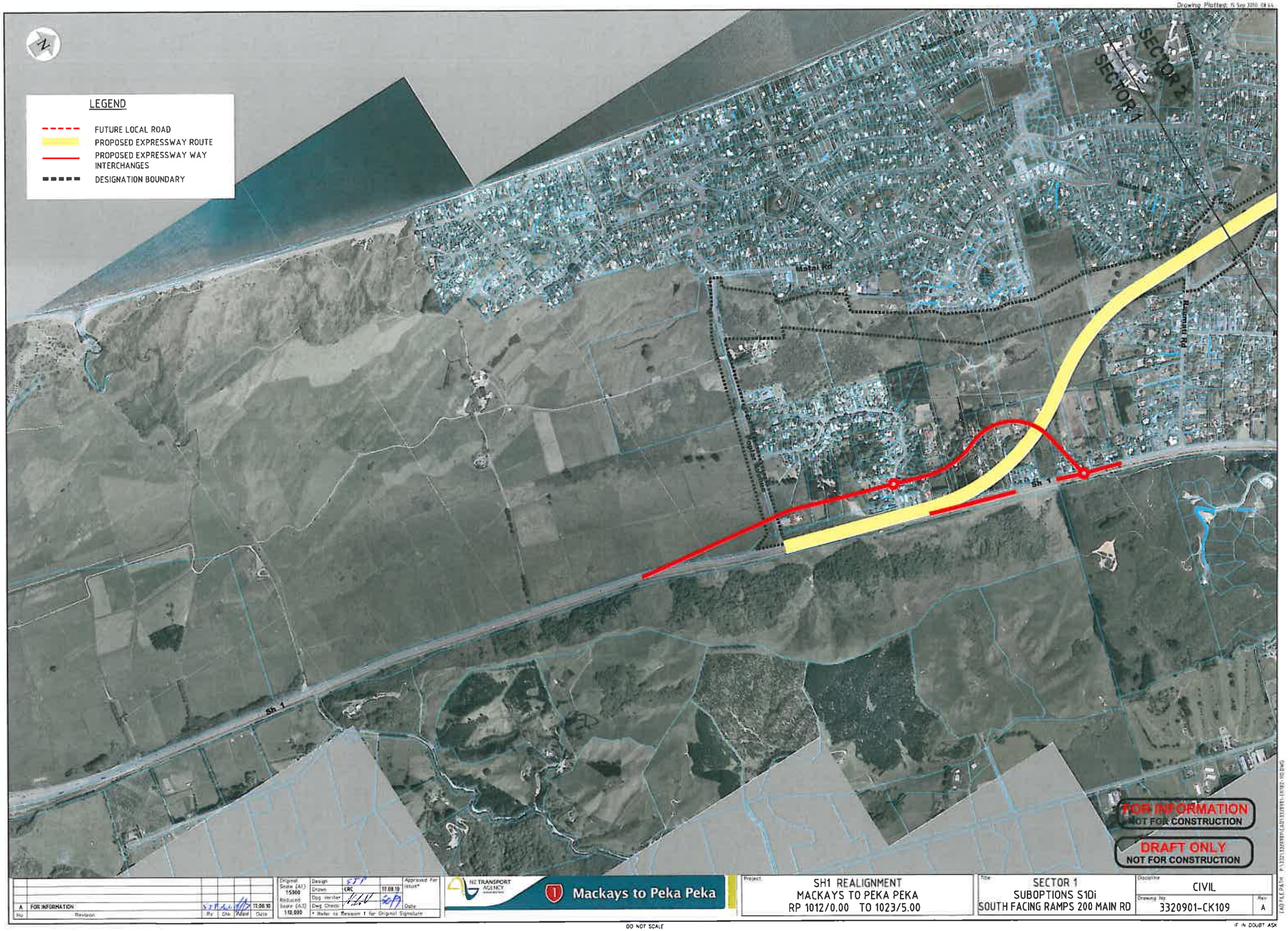
Discipline: CIVIL

Drawing No: 3320901-CK108 · Rev: A

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 15 Sep 2010 08:44



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	STP			11.08.10

Original Scale (A1): 1:500
Reduced Scale (A3): 1:2,000

			Approved For Issue*
Design	STP		
Drawn	LWC	11.08.10	
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

1 Mackays to Peka Peka

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

Title: SECTOR 1
SUBOPTIONS S10i
SOUTH FACING RAMPS 200 MAIN RD

Discipline: CIVIL

Drawing No: 3320901-CK109

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

CAD FILE PATH: P:\3320\3320901\CAD\3320901-CK109-110.DWG

Drawing Plotted: 15 Sep 2010 08:44

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:5000
Reduced Scale (A3) 1:10,000

Design
Drawn CRC 17.08.10
Dwg Verifier
Dwg Check
Approved For Issue*
Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 1
SUBOPTIONS S1Dii
SOUTH FACING RAMPS 200 MAIN

Discipline: CIVIL

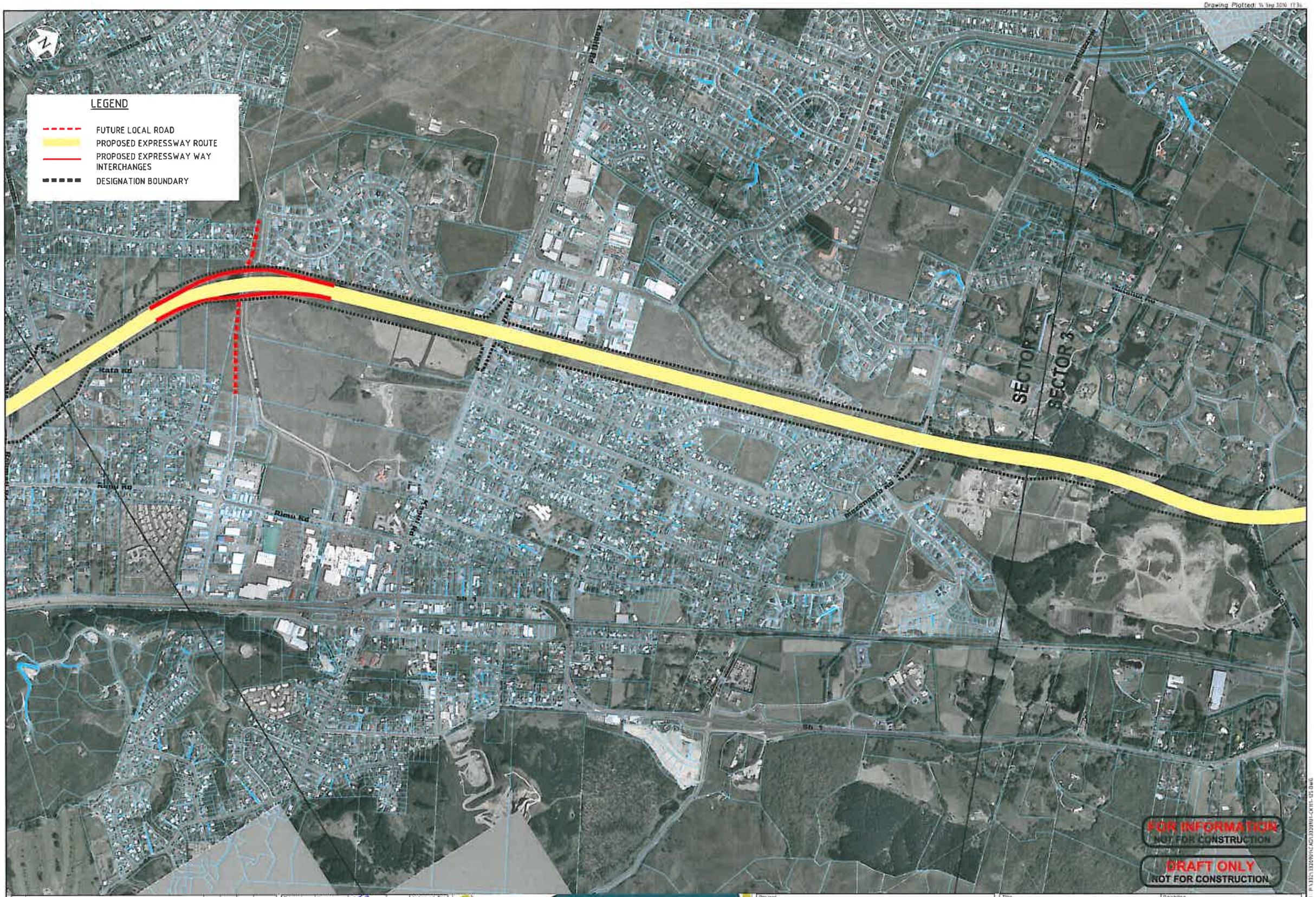
Drawing No: 3320901-CK110

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 14 Sep 2010 17:36



Rev	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	SFP			17.09.10

Original Scale (A1) 1:4000	Design	SFP	Approved For Issue*
	Drawn	CRC	17.09.10
Reduced Scale (A3) 1:12,000	Dsg Verifier		
	Dwg Check		Date
	* Refer to Revision 1 for Original Signature		

NZ TRANSPORT AGENCY

Mackays to Peka Peka

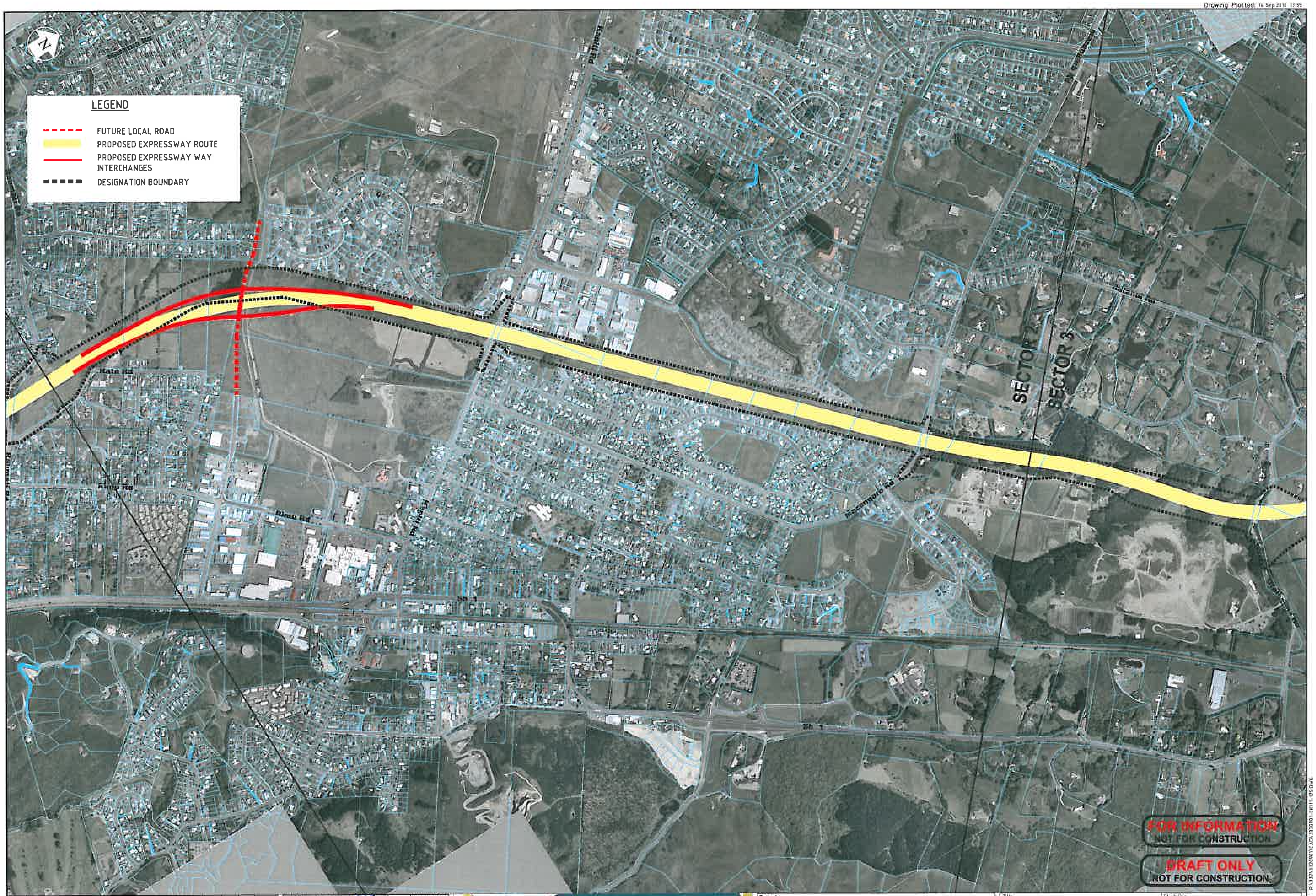
Project	SH1 REALIGNMENT MACKAYS TO PEKA PEKA RP 1012/0.00 TO 1023/5.00
Title	SECTOR 2 SUBOPTIONS S2Ai RAMPS AT IHAKARA EXTENSION
Discipline	CIVIL
Drawing No	3320901-CK111
Rev	A

DO NOT SCALE

IF IN DOUBT ASK

CAD FILE PATH: P:\332x\3320901\CAD\3320901-CK111-V2.dwg

Drawing Plotted: 16 Sep 2010 12:35



No.	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:6000
Reduced Scale (A3) 1:12,000

Design: STP
Drawn: CRC 17.08.10
Dsg Verifier
Dsg Check
Approved For Issue*
Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 2
SUBOPTIONS S2Bi
IHAKARA INTERCHANGE

Discipline: CIVIL

Drawing No: 3320901-CK113

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 14 Sep 2010 11:35

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				10.09.10

Original Scale (A1) 1:6000
Reduced Scale (A2) 1:12,000

Design		
Drawn	CRC	11.09.10
Dsg. Verifier		
Dwg. Check		Date

Approved For Issue*
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

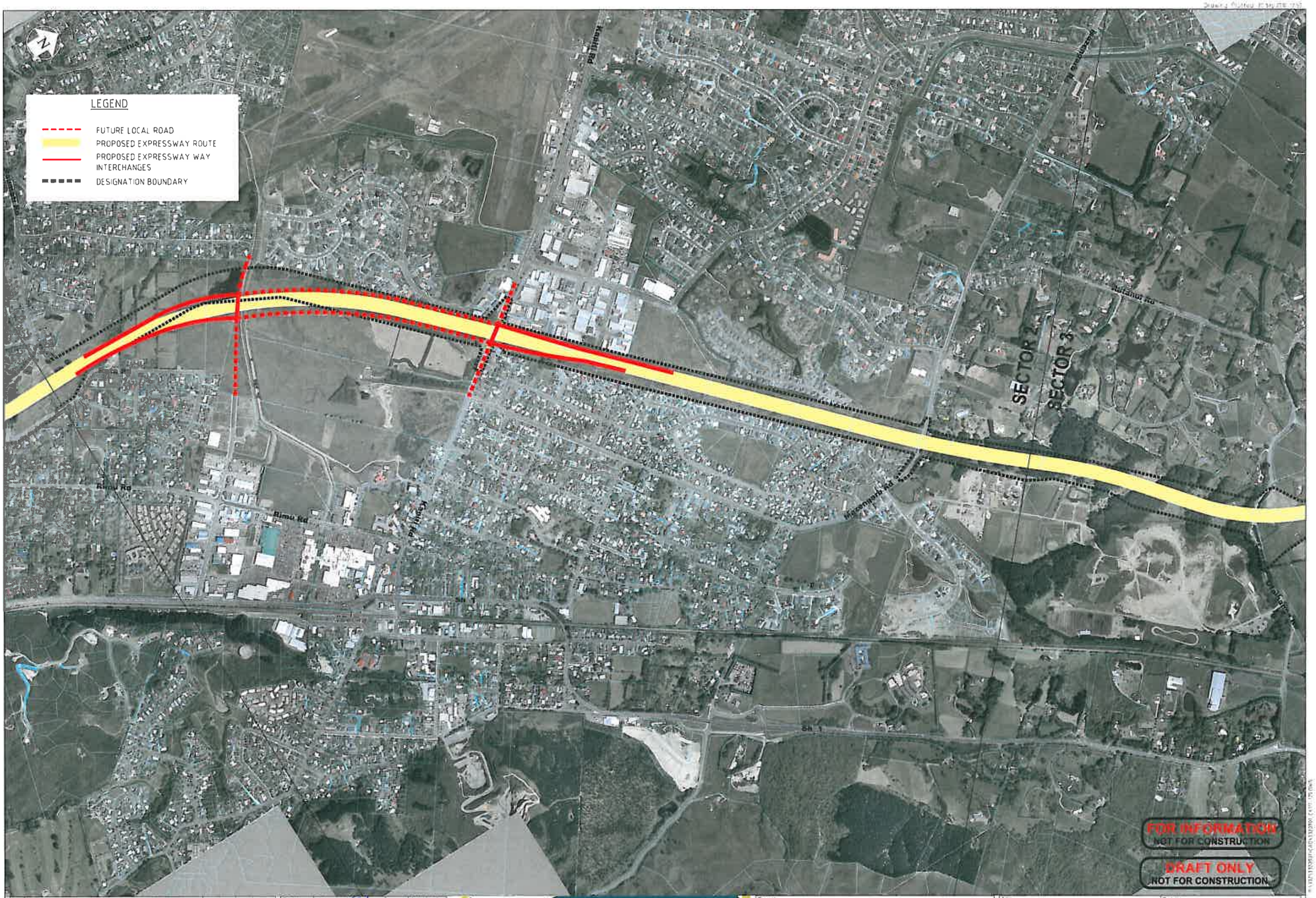
Title: SECTOR 2
SUBOPTIONS S2Aii
RAMPS AT RAUMATI & KAPITI

Discipline: CIVIL
Drawing No: 3320901-CK112
Rev: A

CAD FILE PATH: P:\3320\901\CAD\3320901-CK111-120.DWG

DO NOT SCALE

IF IN DOUBT ASK



A	FOR INFORMATION			17.08.10	
Rev	Revision	By	Chk	Appd	Date

Original Scale (A1): 1:6000
Reduced Scale (A3): 1:12 000

Design	SF		Approved for Issue
Drawn	ENC	17.08.10	
Dwg Verified			
Dwg Check	NGW	30/7	Date

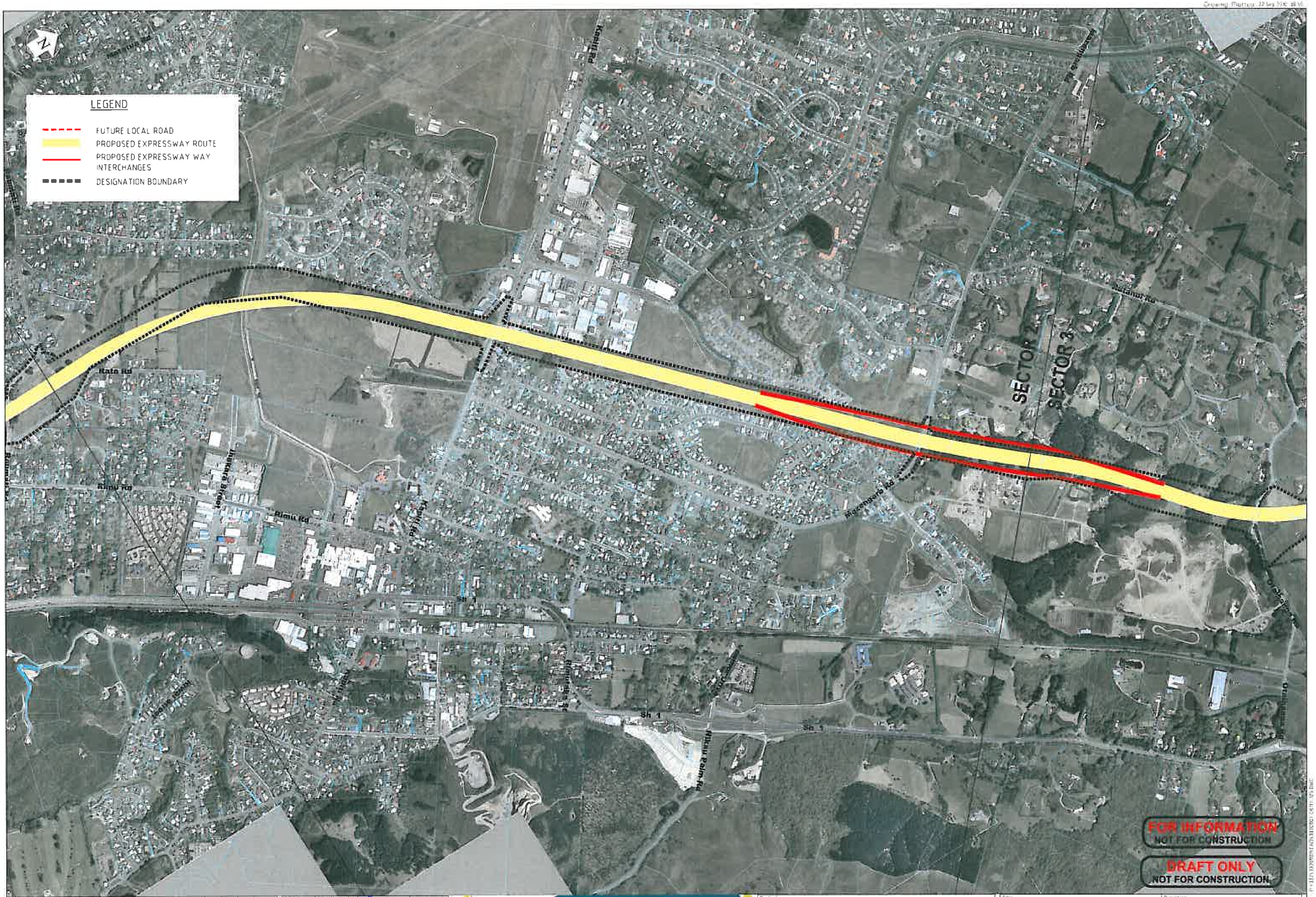
* Refer to Revision Tab for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

Project	SH1 REALIGNMENT MACKAYS TO PEKA PEKA RP 1012/0.00 TO 1023/5.00
Title	SECTOR 2 SUBOPTIONS S2Bii RAMPS AT IHAKARA & KAPITI
Discipline	CIVIL
Drawing No	3320901-CK114
Rev	A

DO NOT SCALE



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:6000 · Reduced Scale (A3) 1:12,000

Design · Drawn · Dsg Verifier · Dwg Check · 17.08.10 · 30/9

Approved For Issue* · Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 2
SUBOPTIONS S2Biii
MAZENGARB RD INTERCHANGE

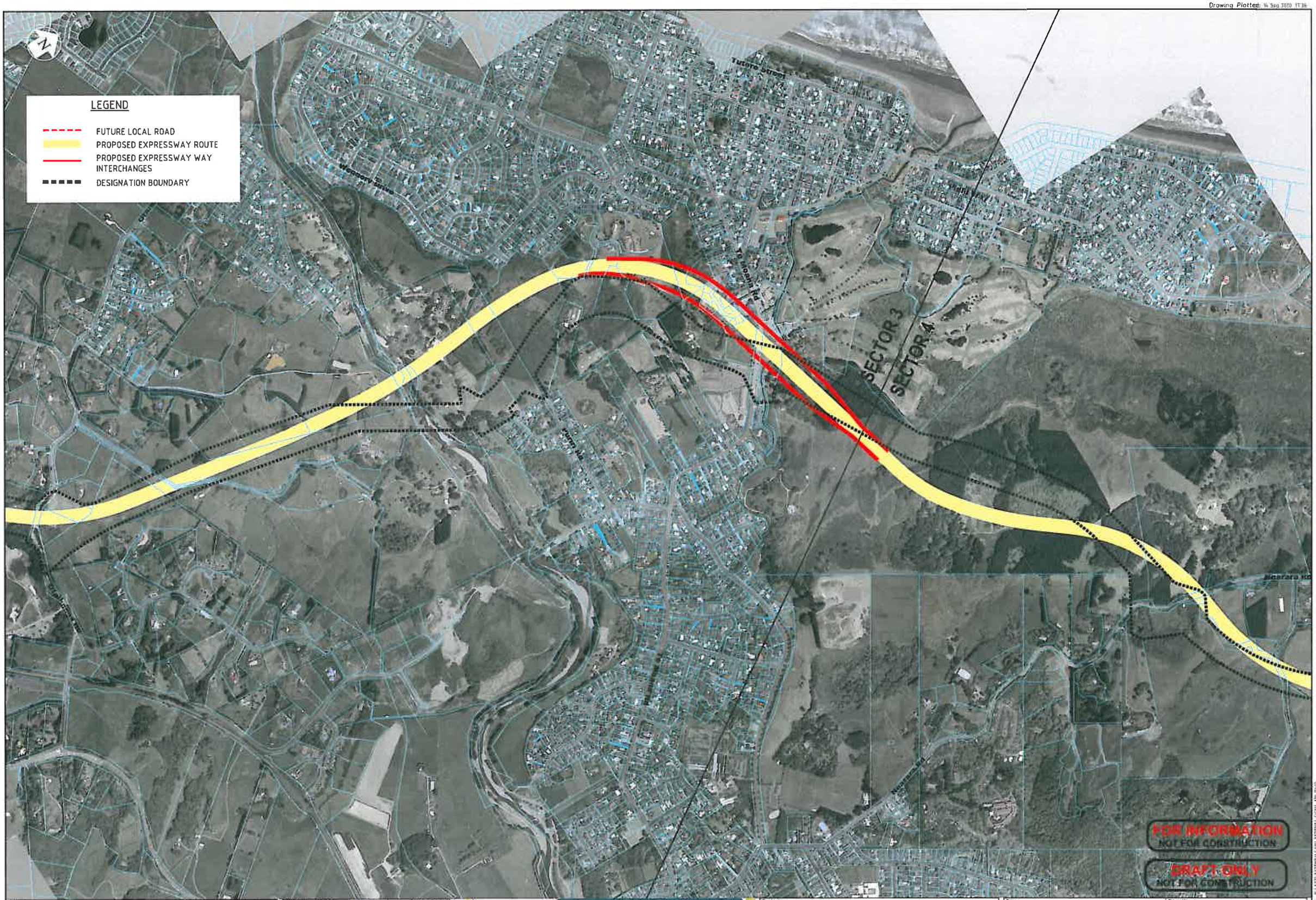
Discipline: CIVIL

Drawing No: 3320901-CK115 · Rev: A

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 14 Sep 2010 17:36



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.09.10

Original Scale (A1): 1:4000
Reduced Scale (A3): 1:12,000

Design	STP	
Drawn	CRC	17.09.10
Dsg. Verifier		
Dwg. Check		Date

* Refer to Revision 1 for Original Signature

Approved For Issue*

NZ TRANSPORT AGENCY

1 Mackays to Peka Peka

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

Title: SECTOR 3
SUBOPTIONS S3Ai
TE MOANA INTERCHANGE

Discipline: CIVIL

Drawing No: 3320901-CK116

Rev: A

CAD FILE PATH: P:\3320\3320901\CAD\3320901-CK116.DWG

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 14 Sep 2010 11:31

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	STP			21.08.10

Original Scale (A1) 1:6000 · Reduced Scale (A3) 1:12,000
Design: STP · Drawn: CRC 17.08.10 · Dwg Verifier · Dwg Check
Approved For Issue* · Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY · Mackays to Peka Peka

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

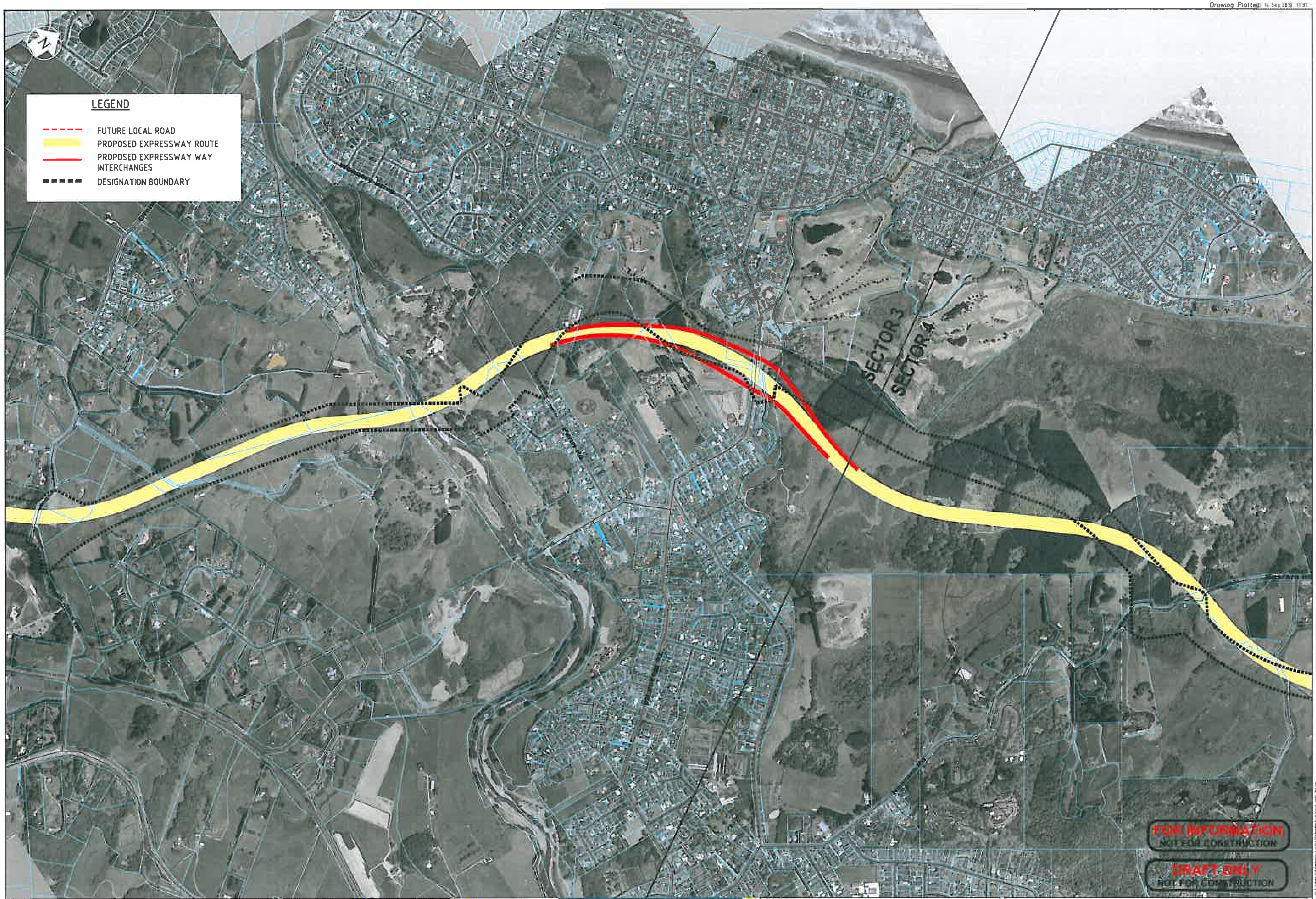
Title: SECTOR 3 SUBOPTIONS S3B TE MOANA INTERCHANGE

Discipline: CIVIL

Drawing No: 3320901-CK117 · Rev: A

DO NOT SCALE

IF IN DOUBT ASK



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:5000; Reduced Scale (A3) 1:12,000

Design; Drawn CRL 11.08.10; Dsg Verifier; Dsg Check; Approved For Issue*; Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 3 SUBOPTIONS S3C TE MOANA INTERCHANGE

Discipline: CIVIL

Drawing No: 3320901-CK118

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 14 Sep 2010 17:31

No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:6000
Reduced Scale (A3) 1:12,000

Design | Drawn: CRC 17.08.10 | Dsg Verifier | Dwg Check | Approved For Issue* | Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 3 SUBOPTIONS S3D TE MOANA INTERCHANGE

Discipline: CIVIL

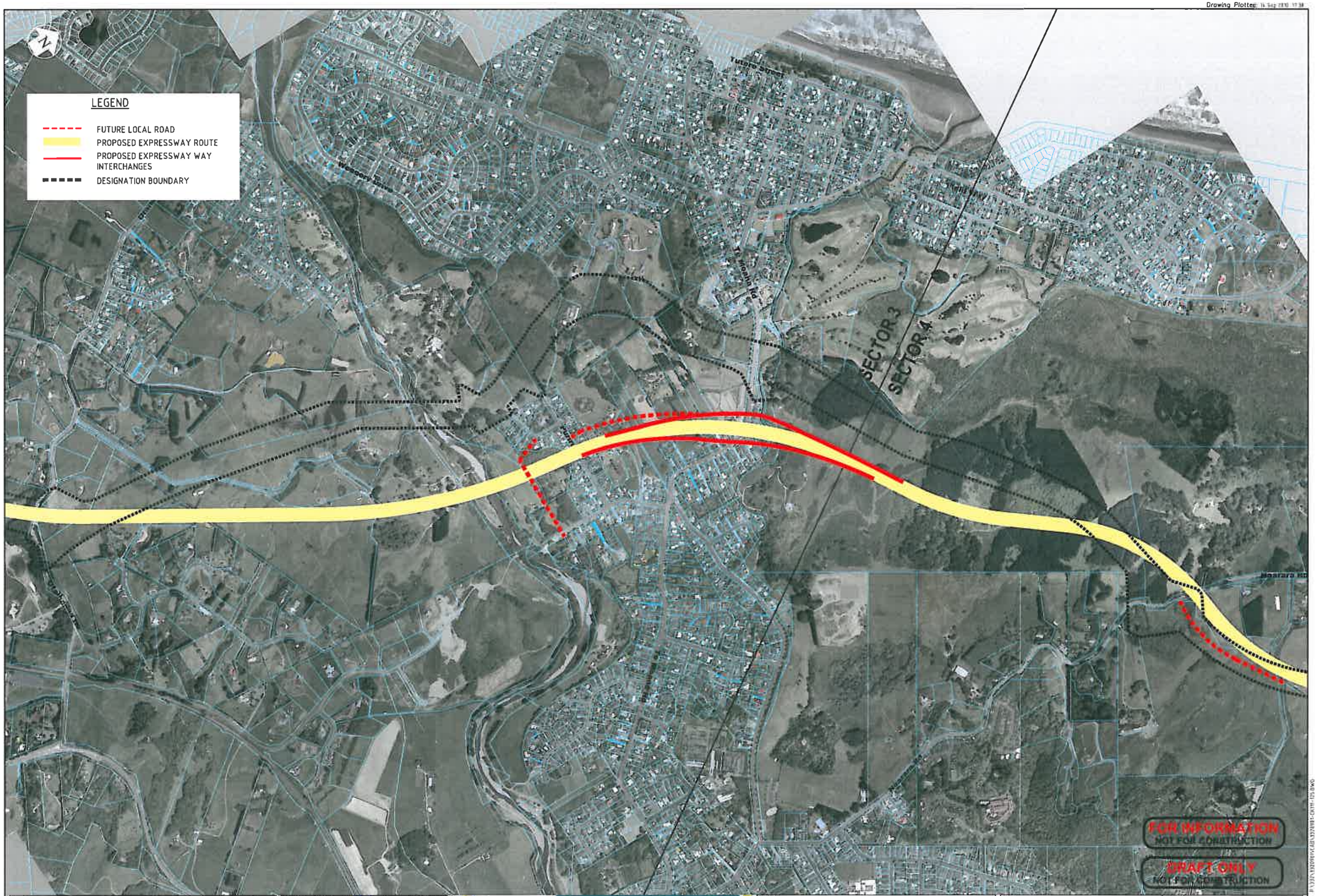
Drawing No: 3320901-CK119

Rev: A

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 14 Sep 2010 11:38



No.	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	SH			13.09.10

Original Scale (A1): 1:4000
Reduced Scale (A3): 1:12,000

Design	SH	
Drawn	ERC	17.08.10
Dwg. Verifier		
Dwg. Check		Date

* Refer to Revision 1 for Original Signature

Approved For Issue*

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 3
SUBOPTIONS S3E
TE MOANA INTERCHANGE

Discipline: CIVIL

Drawing No: 3320901-CK120

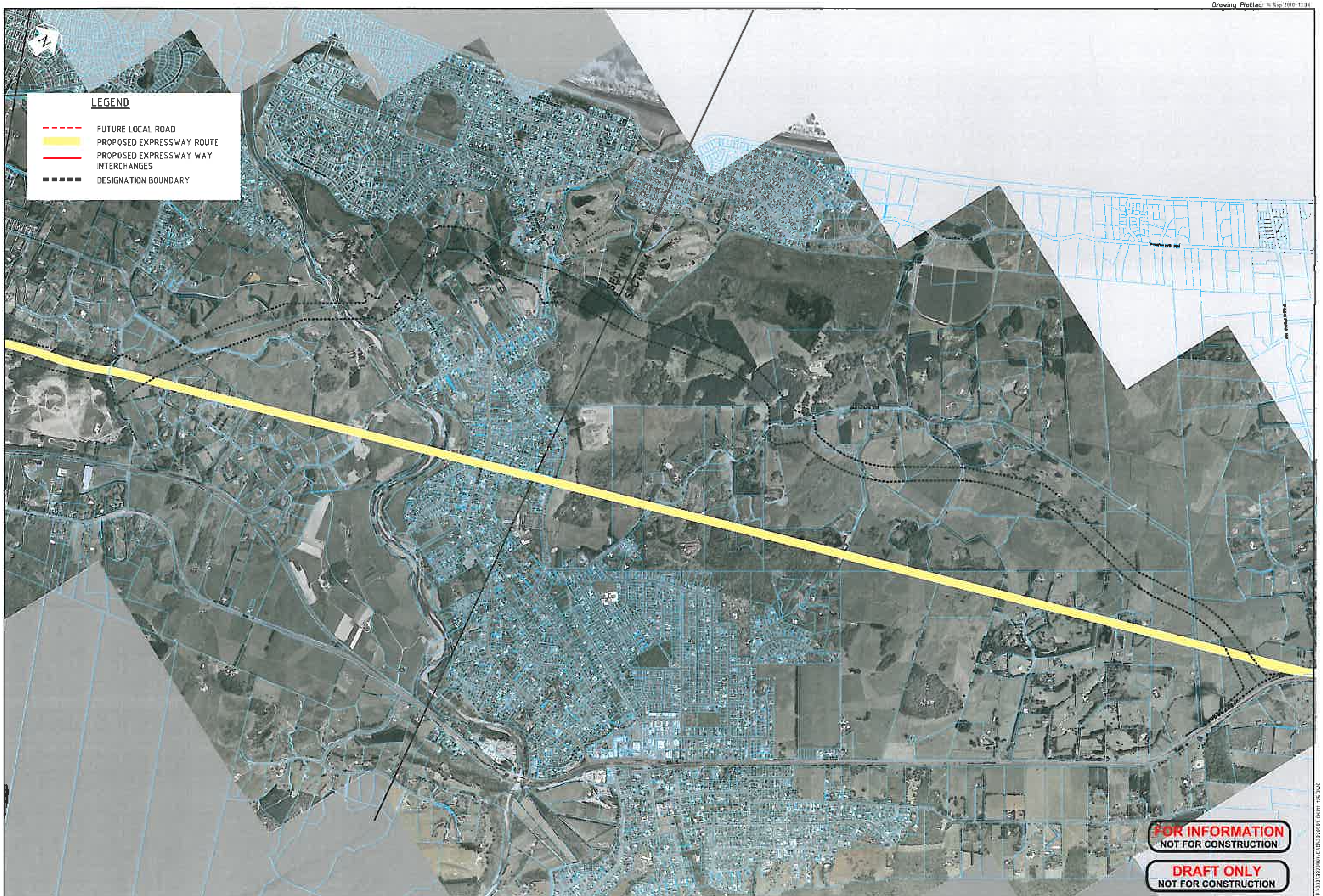
Rev: A

DO NOT SCALE

IF IN DOUBT ASK

I:\3321\3320901\CAD\3320901-CK119-120.DWG

Drawing Plotted: 14 Sep 2010 11:38



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:12,000	Design			Approved For Issue*
	Drawn	CRC	17.08.10	
Reduced Scale (A3) 1:30,000	Dsg Verifier			
	Dsg Check		30/7	Date
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

Title: SECTOR 3 SUBOPTIONS S3F TE MOANA INTERCHANGE

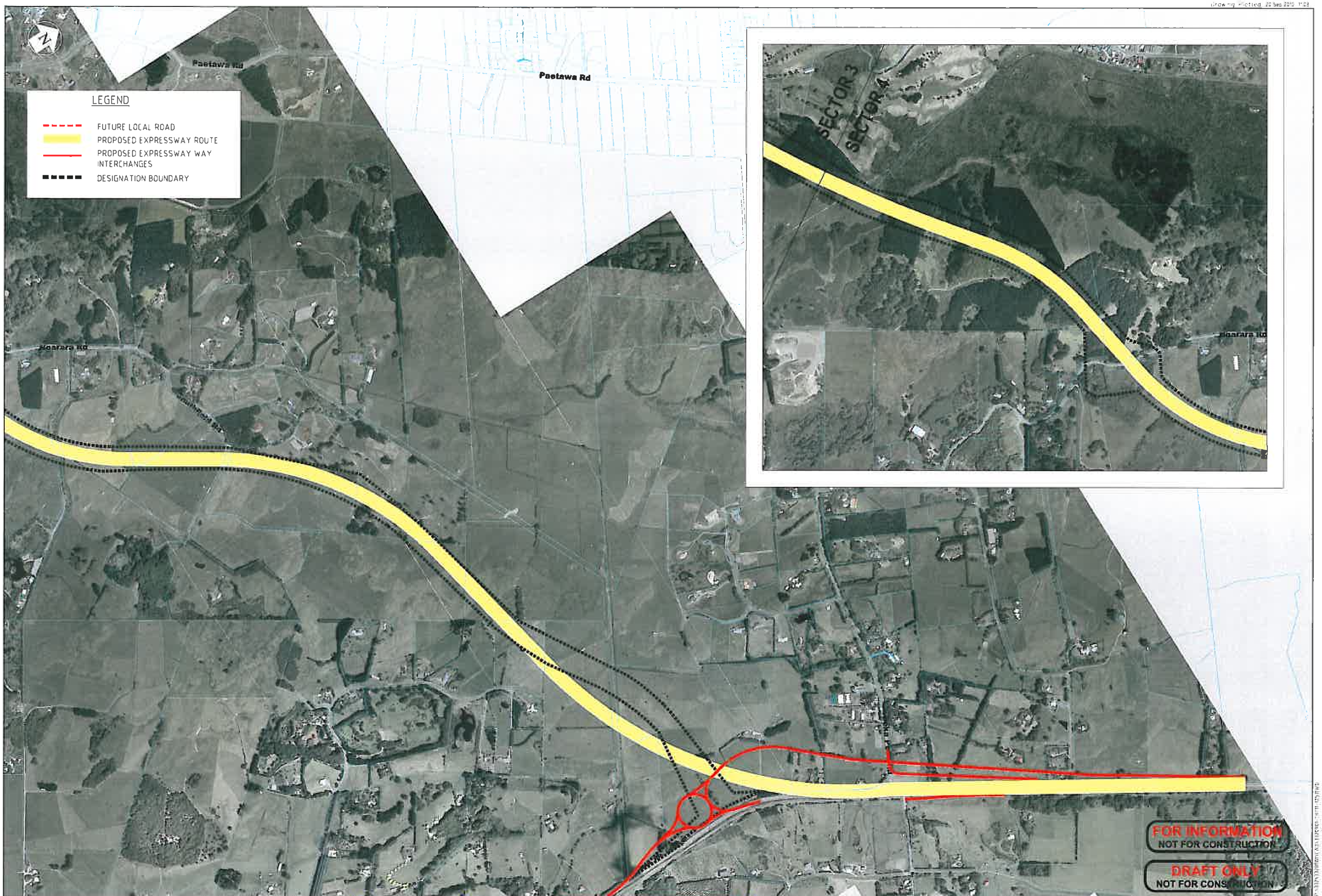
Discipline: CIVIL

Drawing No: 3320901-CK121

Rev: A

DO NOT SCALE

IF IN DOUBT ASK



No	Revision	By	Chk	Appd	Date
A	FOR INFORMATION				17.08.10

Original Scale (A1) 1:6000
Reduced Scale (A3) 1:12 000

Design | Drawn | 17.08.10
Dsg Verifier | Dwg Check
* Refer to Revision 1 for Original Signature

Approved For Issue*

Date

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

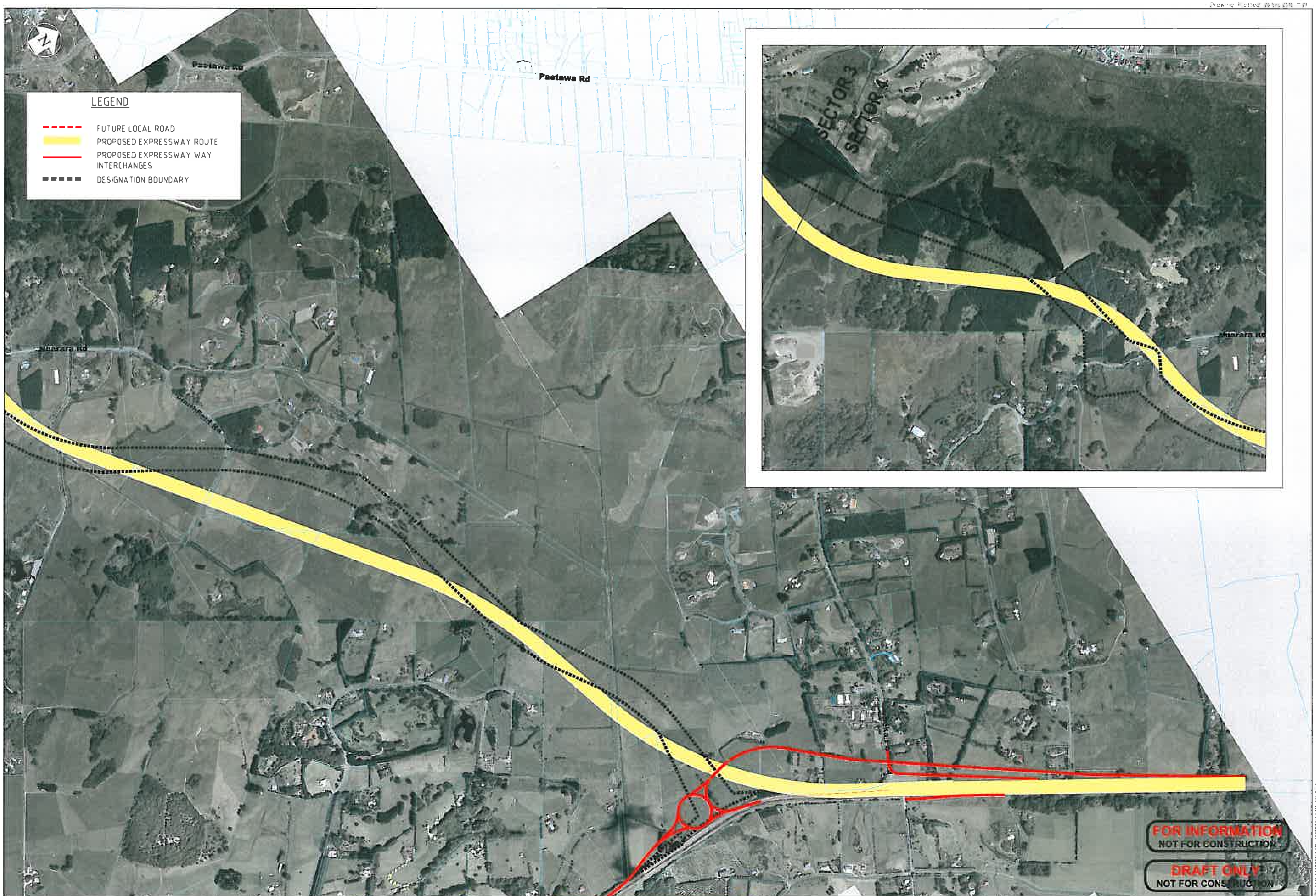
Title: SECTOR 4
SUBOPTIONS S4A
NORTH FACING RAMPS

Discipline: CIVIL

Drawing No: 3320901-CK122

Rev: A

DO NOT SCALE



Rev	Revision	By	Chk	Date
A	FOR INFORMATION			13.08.10

Original Scale (A1) 1:6000 | Reduced Scale (A3) 1:12,000

Design | Drawn | Dsg Verifier | Dwg Check — CBC — 13.08.10

Approved for Issue

NZ TRANSPORT AGENCY

Mackays to Peka Peka

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

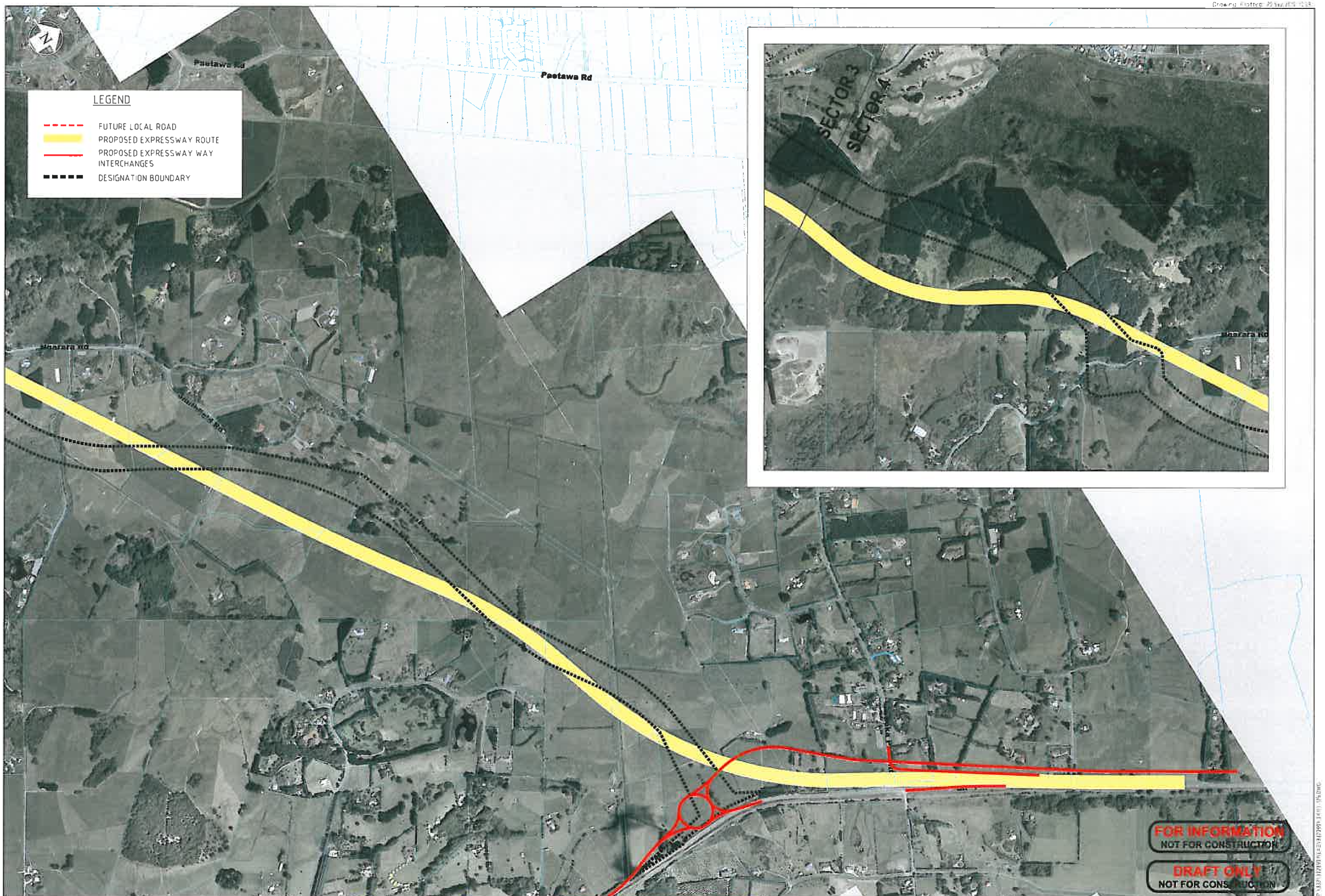
Title: SECTOR 4
SUBOPTIONS S4E

Discipline: CIVIL

Drawing No: 3320901-CK123

Rev: A

DO NOT SCALE



A	FOR INFORMATION			17.08.10
No	Revision	By	Chk / Appd	Date

Original Scale (A1) 1:6000 — Reduced Scale (A3) 1:12 000 — Design: ST — Drawn: CRC 17.08.10 — Dsg Verifier — Dwg Check — * Refer to Revision 1 for Original Signature — Approved for Issue — Date

NZ TRANSPORT AGENCY — Mackays to Peka Peka

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

Title: SECTOR 4 SUBOPTIONS S4F CLEAR OF QEii COV

Discipline: CIVIL

Drawing No: 3320901-CK124 — Rev: A

DO NOT SCALE

Appendix D

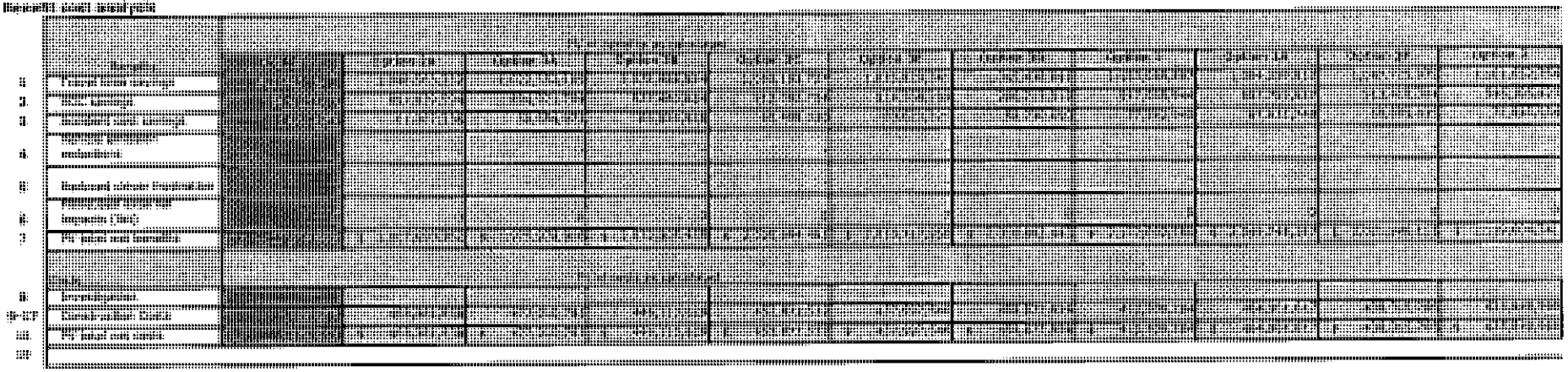
Economic Analysis Worksheets

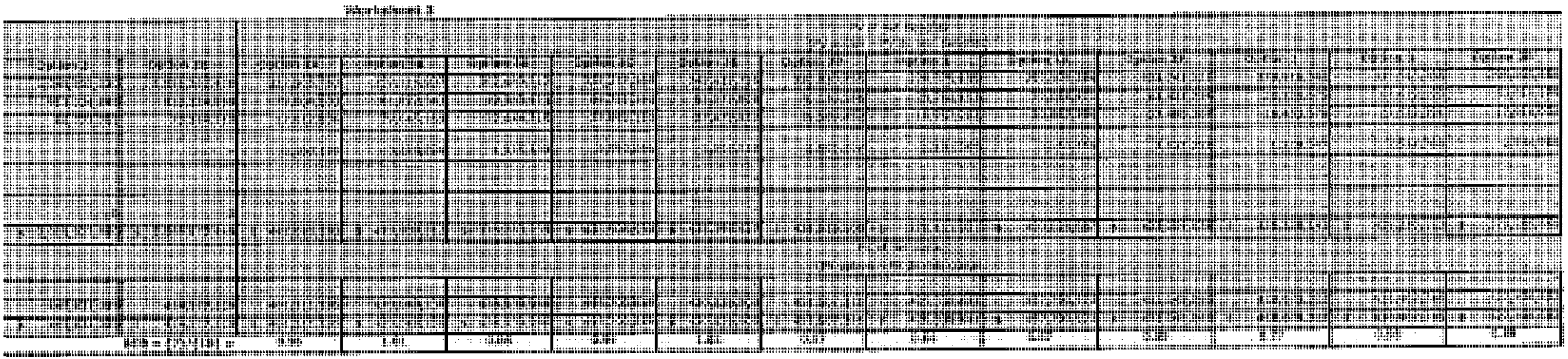
Worksheet 1: Evaluation summary

Evaluation summary **Worksheet 1**

1	Evaluator(s)	Jamie Minchington, Beca Wellington	
	Reviewer(s)	Jerry Khoo, Beca Auckland	
2	**Project/package details**		
	Approved organisation name	NZTA - Wellington	
	Project/package name	SH1 MacKays Crossing to Pekapeka Expressway	
	Your reference	3320901	
	Project description	The scoping stage of this project involves identifying and evaluating a longlist of options mostly involving different connectivity scenarios, to identify a short list of options to take forward to options development stage. The objective of the project is to develop a State Highway 1 (SH1) bypass between MacKays Crossing and north of Peka Peka Road.	
	Describe the predominant type of problem	The highway is the only continuous north-south arterial between MacKays Crossing and Peka Peka and it is the only road crossing of the Waikanae River. SH1 currently performs a local road function which erodes its ability to effectively perform its role of a National State Highway and Road of National Significance. The geometry of SH1 is currently substandard with out of context curves and an inconsitent speed environment. The high degree of side access and local road connections creates side friction which slows traffic on the highway and creates crash risk.	
3	**Location**		
	Brief description of location	The project area extends from north of MacKays Crossing to north of Peka Peka Road on State Highway 1 (SH1) on the Kapiti Coast, including both the Paraparaumu and Waikanae townships.	
4	**Alternatives and options**		
	Describe the do minimum	The 'Do Minimum' represents the option to carry out no alteration to the existing SH1 alignment. The option does include maintenance work, planned future development and expected traffic growth in the region.	
	Summarise the alternatives considered	In 2009 NZTA considered four alignments for the Expressway, including upgrading the existing route, the "Eastern" alignment, the "Western" alignment, and the "Western Link" alignment. The NZTA Board chose the Western Link alignment which is the subject if this investigation.	
	Summarise the options assessed	**Option 1** - Interchanges at Peka Peka Rd (north facing only), Te Moana Rd, Kapiti Rd (north facing only), Raumati Rd (south facing only), QE Park (south facing only), and Kapiti Rd to Raumati Rd auxiliary lanes. **Option 1A** - Interchanges at Peka Peka Rd (north facing only), Te Moana Rd (north facing only), Ihakara St (south facing only), QE Park (south facing only) **Option 2** - Interchanges at Peka Peka Rd (north facing only), QE Park (south facing only) **Option 2A** - Interchanges at Peka Peka Rd (north facing only), Otaihanga Rd, QE Park (south facing only), and a Weggery Rd to Makora Rd river crossing. **Option 2B** - Interchanges at Peka Peka Rd, Te Moana Rd, Kapiti Rd, QE Park (south facing only) **Option 3** - Interchanges at Peka Peka Rd (north facing only), QE Park (south facing only), and a Weggery Rd to Makora Rd river crossing. **Option 3A** - Interchanges at Peka Peka Rd (north facing only), Te Moana Rd, Kapiti Rd, QE Park (south facing only), and a Weggery Rd to Makora Rd river crossing. **Option 3B** - Interchanges at Peka Peka Rd (north facing only), Te Moana Rd, Ihakara St, QE Park (south facing only) **Option 3C** - Interchanges at Peka Peka Rd (north facing only), Te Moana Rd, Kapiti Rd (north facing only), Ihakara St (south facing only), QE Park (south facing only), and Kapiti Rd to Ihakara Rd auxiliary lanes **Option 3D** - Interchanges at Peka Peka Rd (north facing only), Te Moana Rd, Kapiti Rd, Poplar Rd (north facing only), QE Park (south facing only) **Option 3E** - Interchanges at Peka Peka Rd (north facing only), Mazengarb Rd, QE Park (south facing only) **Option 3F** - Interchanges at Peka Peka Rd (north facing only), Te Moana Rd (north facing only), Ihakara St (south facing only), QE Park (south facing only), and a Weggery Rd to Otaihanga Rd river crossing and a new local road between Kapiti Rd to Ihakara Rd.	
5	**Timing**		
	Earliest construction start date (mm/yyyy)		01/2013
	Expected construction start date (mm/yyyy)		01/2013
	Expected duration of construction (months)		36
6	**Economic efficiency**		
	Date economic evaluation completed (mm/yyyy)		09/2010
	Time zero		1-Jul-11
	Base date for costs and benefits		1-Jul-10
	PV cost of do minimum	$	7,170,643
	PV net cost of preferred option	$	438,462,746
	PV net benefits of preferred option	$	429,230,123
7	**BCR**		0.98
8	**FYRR**		4.94% %
9	**Non-monetised impacts**	None	
10	**National strategic factors**	None	

Worksheet 3: Benefit cost analysis





Worksheet 4: Incremental analysis

Incremental analysis **Worksheet 4**

1 Target incremental BCR (from appendix A12.4) 1.0

Step	Base option for comparison			Next higher cost option			Incremental analysis			
	Option (2)	Costs (3)	Benefits (4)	Option (5)	Costs (6)	Benefits (7)	Incremental costs (8) = (6) - (3)	Incremental benefits (9) = (7) - (4)	Incremental BCR (10) = (9) / (8)	Base option for next step (11)
1	1	425,338,641	270,111,921	2B	427,406,682	379,285,654	2,068,041	109,173,733	52.79	2B
2	2B	427,406,682	379,285,654	2	428,679,322	328,238,141	1,272,640	- 51,047,513	-40.11	2B
3	2B	427,406,682	379,285,654	3E	430,826,903	438,398,417	3,420,221	59,112,763	17.28	3E
4	3E	430,826,903	438,398,417	3F	431,145,063	427,204,574	318,160	- 11,193,844	-35.18	3E
5	3E	430,826,903	438,398,417	3	438,462,746	429,230,123	7,635,843	- 9,168,294	-1.20	3E
6	3E	430,826,903	438,398,417	3B	438,939,986	376,283,239	8,113,083	- 62,115,178	-7.66	3E
7	3E	430,826,903	438,398,417	3C	445,700,889	423,508,930	14,873,986	- 14,889,487	-1.00	3E
8	3E	430,826,903	438,398,417	3D	451,507,311	438,535,100	20,680,408	136,682	0.01	3E
9	3E	430,826,903	438,398,417	1A	457,790,973	400,028,687	26,964,070	- 38,369,730	-1.42	3E
10	3E	430,826,903	438,398,417	2A	461,211,195	442,083,253	30,384,292	3,684,836	0.12	3E
11	3E	430,826,903	438,398,417	3A	470,040,138	473,909,312	39,213,235	35,510,895	0.91	3E

12 Preferred project option 3E

13 Rationale for selection Highest incremental BCR

14 Results of sensitivity testing of target incremental BCR

Worksheet 5: First year rate of return

First year rate of return **Worksheet 5**

1	Preferred project option	Option 3
2	Present value of total net costs	$ 438,462,746
3	Mid point of first year of benefits (relative to time zero)	5.0
4	Discount factor (SPPWF) for first year of benefits	0.680

Benefit	Annual benefits of preferred option See Note 1. (5)	Annual benefits of do minimum See Note 1. (6)	Net annual benefit (at time zero) (7)	Growth rate (decimal) See Note 1. (8)	PV of benefits in first year (9)=[1.0+(3)x (8)]x(4)x(7)
Travel time Savings	$ 119,556,373	$ 143,503,549	$ 23,947,176.73	0	$ 16,289,457
Vehicle operating cost savings	$ 105,172,100	$ 109,656,138	$ 4,484,037.92	0	$ 3,050,153
Accident cost savings	$ 6,920,254	$ 10,350,664	$ 3,430,409.91	0	$ 2,333,449

10	Sum of present value of benefits in first year	$ 21,673,059
11	First year rate of return [**(10)/(2)** x 100]	4.94%

Notes:

1. The benefit costs from the year after construction are being used

Appendix E

PPFM Assessment

Assessment

49 We have assessed the activity using the NZTA's assessment framework and have determined the following assessment profile:

Readiness for funding this phase	Ready • the WNCR is included in the 2009-12 NLTP • parts of the WNCR are committed activities with funding already approved, while the activities included in this funding application are shown in the NLTP either as Cat2 with a probable funding priority or as Reserve with a Res.B funding priority, meaning that they have been indicatively programmed to start beyond 2011/12 but would be considered for funding during 2009-12 should circumstances warrant, considering their funding priority and availability of funding. • a funding application has been provided via LTP online and all sections required for funding have been completed
Strategic fit	High • the WNCR is identified as a RONS in the GPS issued May 2009 • it is recognised as a freight route under the NZTA's assessment framework, which would result in it having a High strategic fit given that it has potential for improvements that would make a major contribution to the national economy
Effectiveness	High • the WNCR is integrated into 9 packages of activities that provide a solution to the entire Northern Corridor from Wellington Airport to north of Levin and will contribute to NZTA's Investment & Revenue Strategy, which intends to give effect to the GPS • these packages contribute mainly to LTMA objectives of economic development and safety, but also to sustainability and access & mobility objectives

	• in particular, travel time savings over the overall route are predicted for 2026 at around 33 minutes southbound in the am peak, and about 30 minutes northbound in the pm peak • network integration will be achieved through the development and implementation of the WNCR in conjunction with local authority roading activities • modal integration will be achieved through the investment underway in public transport infrastructure, the coordinated development and construction of the WNCR and local infrastructure and the implementation and funding of PT services • land use integration is of fundamental concern in the development of the WNCR, with particular focus required on the different needs for each package along its length. It will support WCC's plans for urban intensification and green-fields development as well as other authorities' development plans. • organisational integration will be underpinned by MOUs amongst the NZTA and appropriate local and regional authorities for each of the packages • the WNCR aligns well with Wellington's and Horizon's RLTSs • a relatively small, positive contribution to the National Energy Efficiency Conservation Strategy has been modelled • network resilience is improved along the Northern Corridor, with more options available to users to continue travelling when crashes or other events block roads • the impact of road transport is reduced through some of the townships, e.g. Mana, due to lower traffic volumes relative to the do-minimum. However, it would be unrealistic to expect that traffic will be reduced to levels where community severance is no longer an issue, e.g. Mana AADT still remains high at 24,000 in 2026 albeit lower than the current 33,000 vehicles per day. • a negative impact of lower travel times could be encouragement of longer distance commuting as people choose to live further from Wellington and travel to work. While people are likely to take advantage of the easier access to live further afield for life-style reasons, the negative impact would be mitigated to a large extent by:

	○ provision of improved public transport services in the corridor (new electric multiple units (EMUs) and increased frequencies) - overall public transport use is projected to increase from 45% in 2006 to 53% in 2026 with the implementation of the full Linden to MacKay's package. If the roading improvement element of the package was removed, it could be argued that the increase in patronage would be greater. However, this is an unrealistic argument as the level of growth and rail constraints requires all elements of the package to be implemented to achieve the overall benefits of the strategy. ○ continuation of WCC's TDM measures, particularly its parking strategy, which discourages private vehicle use ○ development of Kapiti Coast townships is planned to promote greater self-containment, i.e. with greater scale, more intensive land use and more employment opportunities there will be less need to travel long distances for work • analysis of HCVs shows that use of Transmission Gully will reduce travel times for freight transport but that HCV vehicle operation costs (VOCs) are likely to be higher than for the existing coastal route due to adverse gradients, i.e. some VOC disbenefits accrue to the project. The analysis is at a high level at this stage and will be considered in greater detail during construction. Freight truck associations have indicated that they will use Transmission Gully. • a caveat on the high rating is the affordability of the WNCR - as discussed in the Funding plan and source section
Efficiency	Low • the BCR for the WNCR has been determined at 1.2 • this includes agglomeration benefits as allowed under the NZTA's Economic Evaluation Manual, which increase the BCR from 1.1 to 1.2, but not any other wider economic benefits • the economics have been peer reviewed and material issues either closed off or covered with a satisfactory response from the NZTA's Highway & Network Operations Group • sensitivity testing has been undertaken based on discount rates lower than the

	prescribed 8% (see discussion in following section): o 6% discount rate - BCR = 1.4 o 4% discount rate - BCR = 1.8 • other sensitivity testing includes (see discussion in following section): o capping of benefits from 2026 for RONS elements within Wellington City - BCR = 1.0 o wider economic benefits additional to agglomeration - BCR = 1.4

Economic efficiency issues

50 Sensitivity testing included the use of lower discount rates (4% and 6%) to determine the WMCR BCR, based on a viewpoint that the 8% discount rate set, required by Treasury to be applied to transport infrastructure projects, does not indicate the very long term, strategic nature of the assets proposed under the RONS. This was discussed in detail in the Board papers for the Waikato Expressway and Puhoi to Wellsford RONS (Board papers 09/04/0173 and 09/10/0278).

51 Capping of benefits from 2026 for the WNCR elements within Wellington City has been undertaken to test an argument that, from 2026, congestion in the city would reach a level that would preclude any further traffic growth in the do minimum, i.e. an LOS of F would restrain growth. The argument is that modelling of traffic growth under such circumstance may exaggerate the benefits of the improvements.

52 An evaluation of wider economic benefits (WEBs) has been provided as part of the WNCR business case. The WEBs evaluated for the WNCR comprise:

- agglomeration benefits that arise from intensification of economic activity as a result of better access and reduced travel times from transport improvements; and
- increased employment resulting from the RONS.

53 The procedure for evaluating agglomeration benefits has been incorporated into NZTA's Economic Evaluation Manual (EEM) and has been included in determining the BCR for the WNCR. The impact is relatively small, increasing the BCR from 1.1 to 1.2.

54 As discussed in the Puhoi to Wellsford RONS Board paper, the evaluation of wider economic benefits of employment associated with the RONS has generated substantial debate within the NZTA. Part of this debate centres on the methodology employed for both Puhoi to Wellsford and the WNCR, which uses increases in employment observed in a limited number of UK transport examples and applies them to NZ, as this is seen by some as a credibility stretch. Debate also centres on whether the WEBs have already been captured in the land use and traffic growth assumptions that are part and parcel of calculating the normal transport BCR.

55 At a national level, the transformational impact of the 7 RONS can be considered to generate economic benefits over and above traditional transport benefits captured under EEM procedures. It is possible to demonstrate the WEBs generated through use of a General Equilibrium model, albeit that these are sensitive to the assumptions underpinning the model, mainly that the savings from reduced vehicle operating costs will be realised in increased investment activity rather than retained as profit. While there are difficulties in recognising the national benefits on a regional basis, this does not mean that they do not exist. There is some logic to consider regional benefits from RONS such as the WNCR, even though the indication of WEBs provided in the business case is a rough estimate at best.

Appendix F

Cost & Risk

Project Estimate - Form A

Project Name: MacKays to Peka Peka
Full Route - "Base" Option 3

FE
Alliance Feasibility Estimate

General Scope: 18km from Waterfall Road to Peka Peka road.

Item	Description	Base Estimate	Contingency %	Contingency $	Funding Risk %	Funding Risk $	Comment or Notes (Revised post Risk Workshop)
			%	$	%	$	
A	*Project Property Cost*						
	Nett Project Property Cost (A)	$ 67,700,000	10.0%	$ 6,770,000			Kapiti SH1 Strategy Study + $15M for 200 to 282 Main Road
B	*Phase 1 Investigation, Reporting, Board of Enquiry*						
	Consultancy Fees	$ 3,000,000					Phase 1A = $19.5M, Phase 1B = $5.0M Board of Inquiry $3.0M
	Alliance Professional Costs	$ 24,500,000					
	NZTA Managed Costs						
	Total I&R (B)	$ 27,500,000	1.0%	$ 275,000			
C	*Phase 2 Outline Design & TOC*						
	Consultancy Fees						Phase 2 = $5.0M (1.2% of PAA) Board of Inquiry Costs $3.0M
	Alliance Professional Costs	$ 5,000,000					
	NZTA Managed Costs						
	Total D&PD (C)	$ 5,000,000	10.0%	$ 500,000			
D	*Phase 3 Costs Detailed Design and Construction*						
	Non Alliance Costs						
	Consultancy & Legal Fees	$ -					
	NZTA Managed Costs	$ -					
	Consent & Monitoring Fees	$ -					
	SubTotal Non Alliance Costs (D1)	$ -	0.0%	$ -			
	Alliance Professional Services						
1	Detailed Design & Monitoring	$ 22,000,160	2%	$ 440,003			8% of Physical Works
	Alliance Physical Works						
1	Environmental Compliance	$ 2,774,000	50%	$ 1,387,000			Quanitities as Calculated by Qs (Beca) & Rates by Estimator (FCE)
2	Earthworks	$ 27,328,000	20%	$ 5,465,600			
3	Ground Improvements	$ 50,513,000	20%	$ 10,102,600			
4	Drainage	$ 22,219,000	20%	$ 4,443,800			
5	Pavement & Surfacing	$ 35,782,000	5%	$ 1,789,100			
6	Bridges	$ 69,435,000	5%	$ 3,471,750			
7	Retaining Walls	$ 19,246,500	5%	$ 962,325			
8	Traffic Services	$ 10,396,000	5%	$ 519,800			
9	Service Relocations	$ 6,060,000	5%	$ 303,000			
10	Landscaping	$ 10,086,000	20%	$ 2,017,200			
11	Traffic Management & Temporary Works	$ 4,175,000	5%	$ 208,750			
13	Accomodation	$ 8,084,000	5%	$ 404,200			
14	KCDC Roads	$ 8,905,000	5%	$ 445,250			
15	Contractor Pricing Risk	$ 14,167,086	5%	$ 708,354			
16							
12	Preliminary and General	$ 57,175,000	10%	$ 5,717,500			21% of Physical Works Costs
	PAA LIMB						
1	Alliance PAA LIMB2/LIMB3	$ 53,409,916	5%	$ 5,565,981			14.5% of Alliance PAA Costs
	Phase 3 Costs	$ 421,755,662					
	Total Alliance Construction (D2)	$ 421,755,662	10.4%	$ 43,952,214			
E	**Project Base Estimate (A+B+C+D1+D2)**	**$ 521,955,662**					
F	*Contingency (Assessed / Analysed)*		*9.9%*	*$ 51,497,214*			
G	**Project Expected Estimate (E + F) P50**			**$ 573,452,876**			
H	*Funding Risk (Assessed / Analysed)*				*20.0%*	*$ 114,690,575*	
I	**95th Percentile Project Estimate (G + H) P95**					**$ 688,143,451**	

Option	Base Estimate	P50 9.9%	P95 20.0%	Route
Options				
1	507,000,000	557,000,000	668,400,000	Intchg. @ Poplar Ave and Peka Peka only
1A	544,100,000	597,800,000	717,400,000	Intchg. @ Poplar, Peka Peka plus Weggery bridge
2	510,800,000	561,200,000	673,400,000	Intchg. @ Poplar, Peka Peka & Otaihanga Rd
2A	548,000,000	602,100,000	722,500,000	Intchg. @ Poplar, Peka Peka, Otaihanga Rd plus Weggery bridge
2B	509,300,000	559,600,000	671,500,000	Intchg. @ Poplar, Peka Peka & Kapiti Rd
3	522,000,000	573,500,000	688,200,000	Intchg. @ Poplar, Peka Peka, Kapiti Rd & Te Moana Rd
3A	558,100,000	613,200,000	735,800,000	Intchg. @ Poplar, Peka Peka, Kapiti Rd, Te Moana plus Weggery bridge
3B	522,500,000	574,100,000	688,900,000	Intchg. @ Poplar, Peka Peka, Ihakara St and Te Moana Rd
3C	530,300,000	582,600,000	699,100,000	Intchg. @ Poplar, Peka Peka, Te Moana & split at Kapiti Rd/Ihakara St
3D	536,900,000	589,900,000	707,900,000	Intchg. @ Poplar, Peka Peka, Te Moana & split at Kapiti Rd/Raumati Rd
3E	513,200,000	563,900,000	676,700,000	Intchg. @ Full Poplar, Kapiti Rd & Te Moana
3F	513,600,000	564,300,000	677,200,000	Intchg. @ Poplar, Kapiti Rd, Te Moana and full Peka Peka
Sub Options				
S1Ciii	522,000,000	573,500,000	688,200,000	Intchg. off SH1, route east of Steiner School
S1Dii	531,500,000	584,000,000	700,800,000	Intchg. north of Poplar Ave
S3D	522,000,000	573,500,000	688,200,000	Route east of designation and Urapa, west of Maketu
S3E	532,209,500	584,700,000	701,600,000	Route east of designation , Urapa & Maketu and Intchg at Te Moana
S4Ai	522,000,000	573,500,000	688,200,000	Follows Designation
S4F	522,000,000	573,500,000	688,200,000	Route avoids QEII land

Makays to Peka Peka Risk Register Rev 1

Ref	The risk: what can happen and how can it happen		Qualitative Risk Analysis			Risk Evaluation		Risk Score	Risk Priority	Threat Rank	Risk Reduction Measures & Treatment Type
		Threat or Opportunity	How likely is the event?	Consequence Rating	What are the consequences of the event?	Likelihood Rating	Consequence Rating				
2.0	**Category 2 : Cost Risks (Commercial,Legal,Economic, Managerial)**										
2.1	**Project Scope**										
2.1.1											
2.2	**Alliance Management Team - Project Alliance Board Construction Team**										
2.2.1	Alliance Management Team - Scope of project improved to deliver enhanced outcomes within agreed funding levels.	**Opportunity**	Likely	Major	Upside - better community outcomes, network. solution - but could take longer. Downside - harm to alliance relationship if no agreement but not likely to delay BOI progress.	3	-70	-210	Very High Opportunity		Early discussion of opportunity and funding for local road improvements.
2.2.2	Project Alliance Board - Additional and onorous regional processes are introduced to manage this and the other concurrent RONS projects.	**Threat**	Likely	Medium	Project delivery takes longer due to increased levels of governance.	5	40	200	Very High Threat	24	NZTA resources inside the Alliance team to communicate with NZTA regional and National office to ensure RONS governance and processes are streamlined throughout project. Retain Project Alliance Board personnel.
2.2.3	Construction Team (Estimating) - Increase in cost of materials, plant and labour over predicted levels.	**Threat**	Expected	Substantial	Escalation beyond predicted levels - TOC not agreed - funding not signed.	4	100	400	Extreme Threat	6	Seek opportunities to reduce costs such as on site prefabrication and supply side costs such as bitumen products/aggregate supply.
2.3	**Funding**										
2.3.1											
2.4	**Market Issues**										
2.4.1											
2.5	**Programming Issues**										
2.5.1											
3.0	**Category 3 : Cost Risks (Community, Political), Environmental, Land & Property)**										
3.1	**Health and safety**										
3.1.1	Injury / fatality during construction.	**Threat**	Unlikely	Substantial	Loss of life or serious injury. Prosecution. Poor image. Delay.	3	100	300	Very High Threat	13	Safety in design philosophy. Good Alliance H & S systems set up and utilised. Consider H & S during assessment of constructability.
3.1.2	Traffic accident during construction.	**Threat**	Rare	Major	Loss of life or serious injury. Prosecution. Poor image. Delay.	1	70	70	High Threat	37	Safety in design philosophy. Effective traffic management during construction.
3.2	**Environmental**										
3.2.1	Wetland enhancement as part of project design.	**Opportunity**	Likely	Major	Improvement to local environment and enhanced reputation with local community.	3	-70	-210	Very High Opportunity		Work with agencies / community/ / iwi. Wider land acquisition. Look for appropriate opportunities with regard to stormwater

Makays to Peka Peka Risk Register Rev 1

Ref	The risk: what can happen and how can it happen		Qualitative Risk Analysis			Risk Evaluation		Risk Score	Risk Priority	Threat Rank	Risk Reduction Measures & Treatment Type
		Threat or Opportunity	How likely is the event?	Consequence Rating	What are the consequences of the event?	Likelihood Rating	Consequence Rating				
3.2.2	Vibration during construction and operation affects local residents and property	**Threat**	Quite Common	Medium	Negative environmental affects Poor image Poor relationship with stakeholders. Additional costs to mitigate affects or repair damaged properties. Consenting issues in regard to adhering to conditions of consents.	4	40	160	Very High Threat	26	Good site management. Baseline monitoring during construction phase. Pre-construction building surveys and monitoring during construction.
3.2.3	Excessive pollution levels due to dust / airborne particulates over and above consent conditions during construction phase.	**Threat**	Quite Common	Major	Abatement notice Time delay. Change in construction methodology. Increased cost. Environment Negative image.	4	70	280	Very High Threat	14	Additional dust control measures allowed for in construction methodology.
3.2.4	Onerous consent conditions over and above normal industry conditions following stakeholder / community submissions during the consent process e.g. noise	**Threat**	Quite Common	Major	Programme delay Additional mitigation costs. Poor image and breakdown in relationship with community if conditions not met.	4	70	280	Very High Threat	14	Make allowance in estimates and Target Outturn Cost for mitigation measures required by consents. Allow for possible additional time requirements in construction programme.
3.3	**Cultural**										
3.3.1	Delayed approval because of strong opposition in Waahi tapu/Puriri Road areas	**Threat**	Likely	Substantial	Time, poor image and public relations and breakdown in relationship with stakeholders.	5	100	500	Extreme Threat	1	Early, active and high level / all level engagement with affected parties.
3.3.2	Delay during the construction phase due to construction protocols following discovery of items of cultural or archaeological significance.	**Threat**	Likely	Major	Time, poor image and public relations and breakdown in relationship with stakeholders.	5	70	350	Extreme Threat	7	Allow in budget, early liaison with iwi/archaeologist
3.3.3	Enhance cultural recognition/relationship kaitiaki of waahi tapu	**Opportunity**	Likely	Medium	Escalated involvement and strong focus on being flexible in ideas to resolve / mitigate possible issues.	3	-40	-120	High Opportunity		Escalated involvement and strong focus - flexibility in ideas to resolve or mitigate
3.4	**Resource Management Act Consents**										
3.4.1	Inability to grant consents within the programme timeframe of Dec 2011 for lodgement and approval by Oct 2012. (Poor submission and EPA process)	**Threat**	Quite Common	Medium	Construction start date is delayed.	4	40	160	Very High Threat	26	Robust documentation with EPA. Early engagement and dialogue with the EPA (Planning Steering Group)
3.4.2	Appeal from HPT on issue of historical authority and it is a separate process to the Board of Inquiry.	**Threat**	Quite Common	Major	Prolonged period for consenting. Possible delay to BOI Construction start delay.	4	70	280	Very High Threat	14	Apply for HPT approval early and get good working relationship with them. Work with potential objectors.
3.5	**Land and Property**										
3.5.1	Acquiring property around the Southern connection i.e. 200 Main Road South may involve a complex legal battle.	**Threat**	Likely	Major	Legal process could take up to 4 years to resolve.	5	70	350	Extreme Threat	7	Prioritise acquisition into low, medium and high risk and use appropriate legal instruments where required to meet the programme.
3.5.2	Acquiring properties from landowners who have covenants and easements attached to the title (e.g. QE covenants)	**Threat**	Quite Common	Medium	Length of time to acquire extends or time to extinguish covenants extends.	4	40	160	Very High Threat	26	Identify land early and work with the QE trust to help assist the process of acquisition.

Makays to Peka Peka Risk Register Rev 1

Ref	The risk: what can happen and how can it happen	Qualitative Risk Analysis				Risk Evaluation		Risk Score	Risk Priority	Threat Rank	Risk Reduction Measures & Treatment Type
		Threat or Opportunity	How likely is the event?	Consequence Rating	What are the consequences of the event?	Likelihood Rating	Consequence Rating				
4.0	**Category 4 : Cost Risks (Site Conditions, Engineering, Services, Natural Events)**										
4.1	**Site/Ground Conditions**										
4.1.1	Lack of ground improvement design data leads to incorrect assumptions regarding distribution of materials.	**Threat**	Likely	Substantial	Increased cost and time.	5	100	500	Extreme Threat	1	Further investigation. Allow for conservative improvements in copncept design and estimates.
4.1.2	Insufficient disposal sites on or adjacent to site.	**Threat**	Likely	Substantial	Increased cost and time.	5	100	500	Extreme Threat	1	Develop design and handling methodology.
4.1.3	Increase in seismic performance required following Canterbury earthquake.	**Threat**	Likely	Substantial	Increased cost and time.	5	100	500	Extreme Threat	1	Talk to VAC early on this specific topic.
4.1.4	Suitability and handling of earthworks materials different to predicted levels.	**Threat**	Unlikely	Major	Increased cost and time.	3	70	210	Very High Threat	21	Trails and rigorous planning early.
4.1.5	Depth of treatment required is greater than assumed.	**Threat**	Quite Common	Major	Increased cost and time.	4	70	280	Very High Threat	14	Further ground improvement.
4.1.6	Long term differential settlement exceeds specification and assumed levels.	**Threat**	Unlikely	Major	Increased cost. Poor PR and stakeholder relationship.	3	70	210	Very High Threat	21	Trails, investigations, monitoring during construction and allow suitable
4.1.7	Contaminated ground and fill from landfill at Otaihanga Road	**Threat**	Quite Common	Medium	Environmental issues. Poor stakeholder relationships. Health and safety issues.	4	40	160	Very High Threat	26	Investigations need to be undertaken to establish contamination levels. Establish management plan. Appropriate design to be adopted.
4.1.8	Assumed cut to fill balance is incorrect following further investigations	**Threat**	Unlikely	Medium	Increased cost of fill materials and disposal.	3	40	120	High Threat	30	Further geotechnical investigations required.
4.1.9	Wetland and groundwater interaction changes due to unpredictable flows	**Threat**	Unlikely	Medium	Environmental issues. Poor PR Cost increase.	3	40	120	High Threat	30	
4.1.10	Differential settlement due to dewatering.	**Threat**	Unlikely	Medium	Environmental issues. Poor PR Cost increase.	3	40	120	High Threat	30	
4.2	**Stormwater**										
4.2.1	KCDC waterway requirements are different and more extensive to those assumed in the design.	**Threat**	Likely	Major	Need bridges at larger culvert crossings	5	70	350	Extreme Threat	7	Early discussions with KCDC and Greater Wellington Regional Council.
4.2.2	Increase in total number of culverts to that assumed in the concept design to pick up additional waterways.	**Threat**	Quite Common	Major	Additional culverts across motorway resulting in increase in cost.	4	70	280	Very High Threat	14	Design development to identify actual numbers.
4.2.3	KCDC requirements at town centre and requirement for environmental restoration / and stormwater treatment are more extensive than assumed.	**Threat**	Quite Common	Major	Additional mitigation and associated increase in cost Lack of support at Board of Inquiry of additional work not included in project design scope.	4	70	280	Very High Threat	14	Development and agreement of design philosophy for project with KCDC as early as possible and prior to Board of Inquiry.
4.2.4	Excessive settlement of culverts over and above assumed levels.	**Threat**	Unlikely	Medium	Additional cost Time delays. Excessive post settlement remedial works.	3	40	120	High Threat	30	Geotechnical investigation to confirm ground conditions. Make allowance in TOC.
4.3	**Issues Associated with Structures**										
4.3.1	KCDC requirement to lower K Road into a trench.	**Threat**	Unusual	Substantial	Additional cost, environmental impact	2	100	200	Very High Threat	24	Development of design philosophy for project with KCDC.
4.3.2	Increase in requirement for form and architectural treatment of bridges	**Threat**	Likely	Major	Additional cost of urban design requirements, Breakdown of relationship with KCDC if treatments not acceptable.	5	70	350	Extreme Threat	7	Development of design philosophy for project with KCDC.
4.3.3	Shorten Waikanae River crossing bridge	**Opportunity**	Likely	Medium	Cost saving.	3	-40	-120	High Opportunity		
4.3.4	Requirement to construct temporary structures over waterways during construction over and above assumed temporary works requirements.	**Threat**	Likely	Major	Increase in costs. Additional environmental issues. Board of Inquiry impacts that will need to be mitigated.	5	70	350	Extreme Threat	7	Develop a construction methodology and staging strategy and include in TOC and programme.

Makays to Peka Peka Risk Register Rev 1

Ref	The risk: what can happen and how can it happen		Qualitative Risk Analysis			Risk Evaluation		Risk Score	Risk Priority	Threat Rank	Risk Reduction Measures & Treatment Type
		Threat or Opportunity	How likely is the event?	Consequence Rating	What are the consequences of the event?	Likelihood Rating	Consequence Rating				
4.4	**Design Risks**										
4.4.1	Use the existing State Highway from Mackays to Poplar	**Opportunity**	Expected	Major	Programme and cost saving.	4	-70	-280	Very High Opportunity		Get agreement of this opportunity as early as possible and include in
4.4.2	Premature pavement failure during operation.	**Threat**	Rare	Major	Poor media coverage. Poor PR. Additional cost of repairs.	1	70	70	High Threat	37	Geotechnical investigation. Adoption of suitable design for ground conditions.
4.4.2	Reduction in pavement cost following value management process.	**Opportunity**	Likely	Major	Reduction in capital cost but possible increase in whole of life costs and noise levels.	3	-70	-210	Very High Opportunity		Undertake whole of life cost analysis.
4.4.3	Wrong traffic demands assumed as basis for project design.	**Threat**	Unlikely	Medium	Change in traffic signal requirements. Change to interchange layouts.	3	40	120	High Threat	30	Sensitivity testing. Robust peer reviews.
4.4.4	Reducing design speeds and compromising geometrics to suit limitations of designation.	**Threat**	Unusual	Medium	Fatalities. Accidents. Poor PR.	2	40	80	High Threat	36	Safety audits. Peer reviews.
4.4.5	Significant design changes following the Board of Inquiry process such as the requirement to lower the State Highway at the grade separated K. Road interchange.	**Threat**	Likely	Substantial	Significant additional cost and time delay during design and construction phases of the project.	5	100	500	Extreme Threat	1	Demonstrate visual mitigation works to avoid the requirement to lower the State Highway. Work with KCDC and other stakeholders to resolve issues.
4.5	**Construction Risks**										
4.5.1	Set up mobile asphalt plant	**Opportunity**	Almost Certain	Major	Cost saving.	5	-70	-350	Extreme Opportunity		
4.5.2	Traffic delays during construction	**Threat**	Unlikely	Medium	Poor media coverage	3	40	120	High Threat	30	Liaison between traffic modelling , KCDC requirements and construction methodology.
4.6	**Urban Design**										
4.6.1	Provision for local connectivity in severed areas included in scheme design.	**Opportunity**	Likely	Major	Improved environment affects Positive image and stakeholder relationship.	3	-70	-210	Very High Opportunity		Consultation with KCDC to identify opportunities to provide access. Undertake traffic modelling to ensure access opportunities are practical and beneficial. Application of urban design principles.
4.6.2	Project may be the catalyst for town centre and other development along the alignment.	**Opportunity**	Likely	Major	Good public relations and improved image in the community. Improved stakeholder relationship.	3	-70	-210	Very High Opportunity		Consultation with KCDC. Manage stakeholder and public expectations.
4.6.3	Scope creep from scheme design due to higher community (KCDC) expectations than assumed in design.	**Threat**	Likely	Major	Significant increase in cost. Poor stakeholder and community relationship and image if expectations not met.	5	70	350	Extreme Threat	7	Ongoing consultation with KCDC and other stakeholders to establish and manage their expectations as early as possible. Ensure KCDC are part of the Alliance team Show good urban design principles within project scope throughout the design and construction phases.
4.7	**Changes arising from safety audits**										
4.7.1											

Makays to Peka Peka Risk Register Rev 1

Ref	The risk: what can happen and how can it happen		Qualitative Risk Analysis			Risk Evaluation		Risk Score	Risk Priority	Threat Rank	Risk Reduction Measures & Treatment Type
		Threat or Opportunity	How likely is the event?	Consequence Rating	What are the consequences of the event?	Likelihood Rating	Consequence Rating				
4.8	**Services**										
4.8.1	Additional gas line protection and diversion requirements over and above allowance made in design and TOC.	**Threat**	Quite Common	Major	Time and cost	4	70	280	Very High Threat	14	Early engagement with gas line owners (Vector)
4.8.2	Need to relocate transmission towers.	**Threat**	Unlikely	Major	Time and cost	3	70	210	Very High Threat	21	Design development
4.8.3	Additional ducts for future services at intersections and along State Highway.	**Opportunity**	Expected	Medium	Reduced whole of life costs. Future proofing.	4	-40	-160	Very High Opportunity		NZTA involvement in strategy for project.

Date of Risk Review: 22 September 2010

Compiled by: Brian Lonergan

Contributors:

Date: 24 September 2010