Appendix P Review of Productive Land Criterion

REVIEW OF MCA OUTCOMES FOLLOWING MODIFIED PRODUCTIVE LAND SCORES

As explained in the report, the NZ Transport Agency sought a review of the MCA outcomes taking into account changes to the scoring for the productive land criterion. This was based on concerns that some of the more versatile land within the route sections was no longer productive due to it having been fragmented into lifestyle-sized parcels, or due to it being zoned for non-productive uses. The implication was that, in some cases, the scoring of effects on productive land would have been more adverse than was, in reality, justifiable.

LandVision Ltd was asked to undertake a further exercise of reviewing the land involved and revising the scoring. How this was done, and the revised scores, is explained in the report which is appended. This also sets out the modified scoring which has been the basis of a further analysis (see Table 8 of the appended report).

When the revised scores are applied to the various weighting systems, some minor changes result, as outlined below.

Northern Route Options:

The revised scores resulted in slight changes in all but Option N1 of the northern options. These changes are generally minor and insufficient to cause a change in order of preference overall, although, as might be expected, the modifications made all options marginally more favourable (except for the cultural weighting, which did not incorporate any weight to the productive land criterion). Under the Workshop Weighting, Option N2 replaced Option N3 as the second most adverse option (see Table 4.11 in the main report for the Workshop Analysis findings), but otherwise the identification of the "worst" sections remains the same. This does not alter the overall conclusion that Option N7 consistently scores most adversely, with either Option N2 or N3 the next most adverse. Similarly, it does not alter the conclusion that Options N2, N3 and N7 should be discounted, even though the productive land criterion scoring is more favourable for those sections (in the case of Option N3 by two score points).

Southern Route Options:

The review modified only the scores for Options S4, S6 and S7, and thus resulted in slight changes in the weighted analysis for those options. The analysis made section S4 slightly more favoured under all but the cultural weighting. However, this was insufficient to change the order of preference, and S4 remains one of the two least preferred under all weighting systems. A similar pattern emerged with Options S6 and S7, but again this did not change the identification of the worst performing options. The review does not change the proposal that Options S4 and S5 should be discounted.

Combined Options:

Tables A and B below relate to the combined route options which have been analysed in section 4.6.2 of the main report. The same analysis has been performed, but with the revised scores for the productive land criterion.

Table A: Analysis of Combined Route Options (with revised scores for Productive Land)

Combined Options	Workshop Weighting	RMA Part 2	Social	Natural Environment	Cultural	Economic	Draft MCA	PRG1	PRG2
S8N6	6.0	6.2	5.9	5.5	7.0	5.5*	6.1	5.2*	5.6*
S1N1	6.3	6.4	6.1	5.8	7.3	5.5*	6.1	5.8	6.1
S6N4	5.9	5.8	6.3	5.4	6.2	5.8	4.5*	6.2	6.1
S6N5	5.4*	4.9*	5.8*	4.2*	5.3*	5.7	4.3*	5.7	5.6*
S6N8	5.9	5.3*	6.2	4.6*	5.7	6.2	5.2	6.2	6.0
S6N9	5.8	5.5	6.1	5.5	5.4*	5.9	4.5*	6.1	5.9
S7N4	6.2	6.3	6.2	6.6	6.4	5.7	5.3	6.1	6.1
S7N5	5.6*	5.4	5.7*	5.4	5.4*	5.6	5.1	5.6*	5.6*
S7N8	6.1	5.8	6.1	5.7	5.8	6.1	6.0	6.1	6.0
S7N9	6.0	6.0	6.0	6.7	5.6	5.8	5.3	6.0	5.9

Table B: Summary of rankings (with revised scores for Productive Land)

Combined Option	Workshop Weighting	RMA Part 2	Social	Natural Environment	Cultural	Economic	Draft MCA	PRG1	PRG2
S8N6	6=	8	3	5=	9	1=	9=	1	1=
S1N1	10	10	5=	8	10	1=	9=	4	8=
S6N4	4=	5=	10	3=	7	6=	2=	9=	8=
S6N5	1	1	2	1	1	4=	1	3	1=
S6N8	4=	2	8=	2	5	10	5	9=	6=
S6N9	3	4	5=	5=	2=	8	2=	6=	3
S7N4	9	9	8=	9	8	4=	6=	6=	8=
S7N5	2	3	1	3=	2=	3	4	2	1=
S7N8	8	5=	5=	7	6	9	8	6=	6=
S7N9	6	7	4	10	4	6	6	5	5

By comparing Table A and B with Tables 4-12 and 4-13 in the main report, it can be seen that the revised scores have had some effect in the overall scores awarded under the various weighting systems, and thus the order of preference has changed slightly. Generally this has not affected the top two preferences under any weighting system, except as follows:

- Under the economic weighting system, Option S8N6 has an equal score to S1N1 (as most favoured), with Option S7N5 remaining in third place.
- Under the PRG1 weighting analysis, Option S1N1 (which was second favoured) has
 dropped to fourth place. Second favoured under this analysis is S7N5 with the revised
 scores.
- Under the PRG2 weighting analysis, Options S8N6, S6N5 and S7N5 are all equally favoured with the revised productive land scores. This modifies the position in the main report where Option S8N6 was marginally favoured above the other two.

There are small changes in the order of the remaining rankings (particularly in relation to the lower-ranking options) but these are not of such significance that they would modify the overall identification of the better-performing options.

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21st November 2017



Appendix Otaki to North of Levin Expressway Route Options

Assessment of productive land values when lifestyle & zoned land is excluded

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1 CONCLUSIONS

This analysis looks at the effects on the scoring of the productive land criterion when lifestyle blocks and land already zoned for non-productive purposes is removed from the analysis.

There is a strong argument that once a property becomes a lifestyle property then the productive capability of the land is lost. When lifestyle blocks, ie blocks of less than 10 ha in size, are removed from the analysis there is generally a significant impact on the scoring of the criteria for productive land for some of the options. Where the area of lifestyle blocks is greater, then the impact on productive land within the corridor is generally reduced.

As a result, the scoring for options N2, N3, N4, N5, N6, N8, N9, S4, and S6 all improved (ie moved to a smaller number) from when all property sizes were incorporated into the analysis. Overall those northerly options with the best score from a productive land perspective are options N2, N3, N4 and N6 and for the southerly options S8. All of these options head west.

When HDC zoning is added to the equation, it really only influenced options N7 and N9 for the final scoring. Although adding the zoning to the analysis for properties over 10 ha did reduce the impact on productive land for a further six options it was not considered large enough to influence the final score. This was because the reduction was all class III land and the score for the option prior to adding the zoning to the equation was already low.

Despite these preferred options from a productive land perspective above, if any of the other options were chosen, the difference between the area of productive land from the preferred options and any other option is in reality insignificant. It would probably be less than the area of half an economic dairy unit.

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3 Purpose

At the public consultation there was discussion as to the impact of block or property size on productive land. The purpose of this report is to reassess the impact from the different options when both block size and zoned areas for rural residential are taken into consideration.

4 THE PROCESS USED

A desktop analysis was undertaken in two parts:

- 1. The assessment of the impact from just removing the existing lifestyle blocks.
- 2. The assessment of excluding both the existing lifestyle blocks and the areas where the Horowhenua District Council (HDC) has zoned the land making it easy for subdivision below 10 ha (including residential and industrial land or which is reserve).

The analysis was undertaken using GIS and the 1:50,000 scale NZLRI, property boundaries, and the HDC zoning boundaries.

5 RESULTS

The results from the GIS analysis are shown in the following tables.

Table 1. The impact on land classes for each option from all property sizes.

0.0			LUC C	lass			Total Area	Total area for	Total area for
Option	1	2	3	4	6	7	(ha)	LUC classes 1-3 (ha)	LUC classes 1-2 (ha)
N1	0	68.1	192.1	44.1	64.1	0	368.4	260.2	68.1
N2	37.7	61.7	202.0	15.9	54.7	0	372.0	301.4	99.4
N3	151.6	75.9	99.5	7.3	0	0	334.2	326.9	227.5
N4	122.0	56.6	95.0	0	0	0	273.6	273.6	178.6
N5	127.4	56.6	109.5	0	0	0	293.5	293.5	184.0
N6		9.0	106.4	24.8	245.8	15.4	401.3	115.3	9.0
N7	70.1	84.6	167.9	34.4	7.9	0	364.9	322.6	154.7
N8	66.1	176.9	162.4	0	26.3	0	431.7	405.4	243.0
N9	124.3	89.5	138.8	0.4	0		353.0	352.6	213.8
S 1	92.7	95.0	141.2	0	2.3	0	331.2	328.9	187.7
S2	130.9	71.7	128.7	3.0	2.3	0	336.7	331.3	202.6
S 3	154.9	21.8	154.3	12.5	2.3	0	345.8	330.9	176.6
S4	194.6	48.6	244.6	10.0	2.3	0	500.1	487.8	243.2
S5	204.6	96.5	165.5	24.6	4.0	0	495.2	466.6	301.2
S6	127.1	80.3	268.5	26.0	7.8	0	509.8	475.9	207.3
S 7	26.8	104.0	360.0	14.5	47.2	0	552.5	490.8	130.8
S8	69.4	46.1	200.2	1.5	4.5	0	321.7	315.7	115.5

Table 2. The number of properties affected for the different size categories for each option.

	Number of	Total area	Average	Largest		Number of	properties	
Option	properties	(ha)	size (ha)	size (ha)	<4000 m2	4000 m2 to 5 ha	>5 ha to 10 ha	>10 ha
N1	107.0	1,549.4	14.5	119.4	8	44	19	36
N2	152.0	1,397.4	9.2	119.4	12	93	17	30
N3	194.0	765.5	3.9	40.9	37	101	37	19
N4	143.0	576.4	4.0	55.6	27	83	23	10
N5	132.0	813.8	6.2	56.8	19	72	24	17
N6	84.0	2,270.0	27.0	179.4	10	29	11	34
N7	134.0	1,010.6	7.5	108.7	25	56	26	27
N8	198.0	1,441.3	7.3	143.2	25	109	34	30
N9	140.0	934.0	6.7	56.8	17	72	28	23
S 1	97.0	1,324.8	13.7	74.6	6	18	27	46
S2	101.0	1,380.4	13.7	74.6	6	20	28	47
S 3	117.0	1,236.3	10.6	74.6	12	35	31	39
S4	195.0	1,472.2	7.5	74.6	32	79	42	42
S 5	201.0	1,416.0	7.0	58.5	36	86	37	42
S6	205.0	1,395.9	6.8	79.6	25	107	34	39
S 7	147.0	1,675.4	11.4	162.6	9	64	27	47
S8	87.0	1,225.4	14.1	62.2	2	22	19	44

Table 3. A breakdown of the total and average areas of properties within each option.

Option		Total area o	f properties			Average area	of properties	
	<4000 m2	4000 m2 to 5 ha	>5 ha to 10 ha	>10 ha	<4000 m2	4000 m2 to 5 ha	>5 ha to 10 ha	>10 ha
N1	1.5	103.4	123.8	1,320.8	0.19	2.35	6.52	36.69
N2	2.9	179.8	117.5	1,097.2	0.24	1.93	6.91	36.57
N3	7.1	169.0	241.1	348.3	0.19	1.67	6.52	18.33
N4	6.1	186.0	151.5	232.8	0.23	2.24	6.59	23.28
N5	4.5	162.9	159.5	486.8	0.24	2.26	6.65	28.64
N6	2.5	52.7	76.8	2,138.0	0.25	1.82	6.98	62.88
N7	4.9	104.9	182.4	718.3	0.20	1.87	7.02	26.60
N8	5.7	189.5	200.5	1,045.6	0.23	1.74	5.90	34.85
N9	4.1	159.9	192.6	577.4	0.24	2.22	6.88	25.10
S1	0.8	36.3	196.0	1,091.7	0.14	2.02	7.26	23.73
S2	0.8	44.4	197.1	1,138.0	0.14	2.22	7.04	24.21
S3	2.2	73.1	221.2	939.8	0.18	2.09	7.14	24.10
S4	6.4	160.0	279.6	1,026.3	0.20	2.03	6.66	24.44
S 5	6.6	184.4	251.3	973.6	0.18	2.14	6.79	23.18
S6	5.2	198.6	229.1	963.1	0.21	1.86	6.74	24.69
S 7	2.1	116.4	197.5	1,359.3	0.23	1.82	7.32	28.92
S8	0.3	44.3	132.4	1,048.4	0.13	2.01	6.97	23.83

Table 4. The LUC class distribution of the effected land for properties greater than 10 ha for each of the options.

Option			LUC C	lass			Total Area	Total area for LUC classes	Total area for LUC classes
орион	1	2	3	4	6	7	(ha)	1-3 (ha)	1-2 (ha)
N1	0	34.6	140.1	48.8	57.0	0	280.7	174.7	34.6
N2	30.0	23.6	91.3	16.0	50.4	0	211.5	144.9	53.6
N3	56.9	7.1	37.6	1.9	0	0	103.5	101.6	64.0
N4	14.9	20.0	49.3	0	0	0	84.2	84.2	34.9
N5	43.2	20.0	70.6	0	0	0	133.9	133.9	63.3
N6	0	8.6	81.0	17.2	221.4	15.3	343.6	89.6	8.6
N7	30.3	40.2	133.8	20.1	6.5	0	231.0	204.4	70.6
N8	19.8	102.6	93.6	0	23.6	0	239.5	216.0	122.4
N9	47.8	30.0	107.9	0.3	0	0	186.0	185.7	77.8
S 1	53.2	72.4	104.7	0	0.6	0	230.9	230.2	125.6
S2	81.7	53.3	92.2	3.0	0.6	0	230.9	227.2	135.0
S 3	103.2	11.3	115.3	6.2	0.6	0	236.5	229.7	114.4
S4	96.4	15.0	165.7	2.2	0.6	0	280.0	277.1	111.4
S 5	93.9	51.3	102.6	19.7	2.3	0	269.8	247.8	145.2
S6	43.8	48.7	133.4	24.0	6.1	0	256.0	225.9	92.5
S 7	12.0	70.1	269.4	10.0	44.1	0	405.6	351.5	82.1
S8	46.3	41.6	163.0	1.5	2.8	0	255.2	251.0	87.9

Table 5. The LUC distribution of the affected areas for properties greater than 10 ha and the HDC 'zoned land' is excluded.

Option			LUC C	lass			Total Area	Total area for LUC classes	Total area for LUC classes
	1	2	3	4	6	7	(ha)	1-3 (ha)	1-2 (ha)
N1	0	34.6	129.1	48.8	56.0	0	268.7	163.7	34.6
N2	29.6	23.6	80.3	16.0	49.3	0	199.0	133.5	53.2
N3	42.5	7.1	14.2	1.9	0	0	65.6	63.8	49.6
N4	14.9	20.0	5.1	0	0	0	39.9	39.9	34.9
N5	43.2	20.0	31.5	0	0	0	94.7	94.7	63.3
N6	0	8.6	81.0	17.2	221.4	15.3	343.6	89.6	8.6
N7	22.1	40.2	112.7	20.1	6.5	0	201.7	175.0	62.3
N8	19.8	102.6	93.6	0	23.6	0	239.5	216.0	122.4
N9	47.8	30.0	56.9	0	0	0	134.6	134.6	77.8
S 1	53.2	72.4	104.7	0	0.6	0	230.9	230.2	125.6
S2	81.7	53.3	92.2	3.0	0.6	0	230.9	227.2	135.0
S 3	103.2	11.3	115.3	6.2	0.6	0	236.5	229.7	114.4
S4	96.3	15.0	144.9	1.6	0.6	0	258.5	256.2	111.3
S 5	93.9	51.3	102.6	19.7	2.3	0	269.8	247.8	145.2
S6	43.8	48.7	133.4	24.0	6.1	0	256.0	225.9	92.5
S 7	12.0	70.1	248.8	10.0	44.1	0	385.0	330.9	82.1
S8	46.3	41.6	163.0	1.5	2.8	0	255.2	251.0	87.9

Table 6. Summary table showing the impact from the different options.

	Area (ha	a) for all LUC	classes	Area for	LUC classes	1-3 (ha)	Area for	LUC classes	1-2 (ha)
Option	All propertie s	Includes only propertie s greater than 10 ha	Propertie s greater than 10 and zoned	All propertie s	Includes only propertie s greater than 10 ha	Propertie s greater than 10 and zoned	All propertie s	Includes only propertie s greater than 10 ha	Propertie s greater than 10 and zoned
N1	368.4	280.7	268.7	260.2	174.7	163.7	68.1	34.6	34.6
N2	372.0	211.5	199.0	301.4	144.9	133.5	99.4	53.6	53.2
N3	334.2	103.5	65.6	326.9	101.6	63.8	227.5	64.0	49.6
N4	273.6	84.2	39.9	273.6	84.2	39.9	178.6	34.9	34.9
N5	293.5	133.9	94.7	293.5	133.9	94.7	184.0	63.3	63.3
N6	401.3	343.6	343.6	115.3	89.6	89.6	9.0	8.6	8.6
N7	364.9	231.0	201.7	322.6	204.4	175.0	154.7	70.6	62.3
N8	431.7	239.5	239.5	405.4	216.0	216.0	243.0	122.4	122.4
N9	353.0	186.0	134.6	352.6	185.7	134.6	213.8	77.8	77.8
S1	331.2	230.9	230.9	328.9	230.2	230.2	187.7	125.6	125.6
S2	336.7	230.9	230.9	331.3	227.2	227.2	202.6	135.0	135.0
S 3	345.8	236.5	236.5	330.9	229.7	229.7	176.6	114.4	114.4
S 4	500.1	280.0	258.5	487.8	277.1	256.2	243.2	111.4	111.3
S 5	495.2	269.8	269.8	466.6	247.8	247.8	301.2	145.2	145.2
S6	509.8	256.0	256.0	475.9	225.9	225.9	207.3	92.5	92.5
S 7	552.5	405.6	385.0	490.8	351.5	330.9	130.8	82.1	82.1
S8	321.7	255.2	255.2	315.7	251.0	251.0	115.5	87.9	87.9

6 DISCUSSION

There is a strong argument that once a property becomes a lifestyle property then the productive capability of the land is lost. This is the reason why some district councils seek to prohibit the subdivision of highly versatile or productive land (ie LUC classes I and II or I to III).

In the Horowhenua District, the Horowhenua District Council has restricted subdivision on highly versatile land (ie LUC class I and II land). For these areas 'lifestyle sites' can be created around an existing dwelling under a controlled activity status provided 10 ha remain. The lifestyle site has to be between 0.5 and 1 ha in size. If the applicant cannot comply with this, then it is a restricted discretionary activity.

If the 'lifestyle' blocks, ie the properties less than 10 ha in size, are omitted in the assessment due to a loss of production capability, then tables 1 to 6 shows the following:

1. Southern options heading west of Levin (S1, S2, S3, & S8)

- There is very little difference in the total areas between the different options. Option S8 has the greatest area (255 ha) whilst Options S1 and S2 has the least area (231 ha)
- There is very little difference between the options for land that has been classified as classes I to III land 230 ha for S3 to 251 ha for option S8.
- If just the LUC classes I and II are considered then option S8 (88 ha) has significantly less highly versatile land affected compared with the other three options (114 ha for option S3 through to 135 ha for Option S2).
- 2. Southern options heading east of Levin (S4, S5, S6 & S7)
 - There is a significant difference between options for the total area affected. Option S5 is the least affected with 270 ha whilst Option S7 is the most affected with 406 ha.
 - The area of LUC class I to III land also varies significantly between the different options from 226 ha (S6) through to 352 ha (S7).
 - The area of classes I and II land shows a different trend with Option S7 having the least (82 ha) through to Option S5 having the most (145 ha).
 - The Options S4 and S5 have significantly more class I land compared with the other options. Option S7 has significantly more class III land compared with the other options.
- 3. Northern options heading west of Levin (N1, N2, N3, N6 & N7)
 - The total area of land affected varies significantly from 104 ha (N3) through to 344 ha (N6). This reflects the greater number of lifestyle blocks in Option N3.
 - The area of land with LUC classes I to III also vary significantly. Option N6 has the least at 90 ha whilst Option N9 has the most at 204 ha. This reflects that N6 is the most western option running through a large area of lower quality sand country. Considering just classes I and II shows the same pattern.
- 4. Northern options heading to the east of Levin (N4, N5, N8, & N9)
 - For the properties greater than 10 ha the option with the most impact on all classes of land is option N8 (240 ha) It also has the highest amount of highly productive or versatile land affected.
 - Option N4 is the least impactive on both the highly productive or versatile land and all land classes. This is because lifestyle blocks make up nearly 70% of the option corridor land.

When the HDC planning zones are incorporated into the analysis for properties greater than 10 ha the following points are noted:

- For the southern options there is a slight reduction in the area of productive land affected for options S7 and S4 but this reduction is only for the LUC class III land. Overall these reductions are insignificant. There is no change for the other southern options.
- For of the five northern options heading west had a reduction in classes I to III land. The largest of these 29 ha for N7 and 38 ha for N3. Both of these options also had a reduction in the area of classes I and II land affected (14 ha for N3 and 8 ha for N7).
- For the northern options heading east there is a significant reduction in the LUC class I to III land affected for options N4 (44 ha), N5 (39 ha), and N9 (51 ha). All of this reduction is LUC class III land as there was no change to the class I and II land.

7 OPTION SCORING

The scoring system used to assess the options is shown in the following table.

Table 7. The scoring system.

Score	Description
1	The option presents few difficulties on the basis of the criterion being evaluated, taking into account reasonable mitigation proposals. There may be significant benefits in terms of the attribute.
2	The option presents only minor areas of difficulties on the basis of the criterion being evaluated, taking into account reasonable mitigation proposals. There may be some benefits in terms of the attribute.
3	The option presents some areas of reasonable difficulty in terms of the criterion being evaluated. Effects cannot be completely avoided. Mitigation is not readily achievable at reasonable cost, and there are few or no apparent benefits.
4	The option includes extensive areas of difficulty in terms of the criterion being evaluated, which outweigh perceived benefits. Mitigation is not readily achievable.
5	The option includes extreme difficulties in terms of achieving the project on the basis of the criterion being evaluated.

Each option was assessed using the above criteria and the results of this are shown in the Table 8 below. In undertaking the assessment the scoring of the options when the property sizes were not taken into consideration were used as the bench mark. Where the area of productive land was reduced significantly in both LUC classes I to II or I to III land as a result of the 'greater than 10 ha' criterion, the score was adjusted accordingly. The table above also notes that for a scoring of 1 or 2 there would be some benefit as a result of undertaking that option. In reality, apart from potential access, this is considered not probable and ignored as part of the scoring.

Table 8. Option scoring.

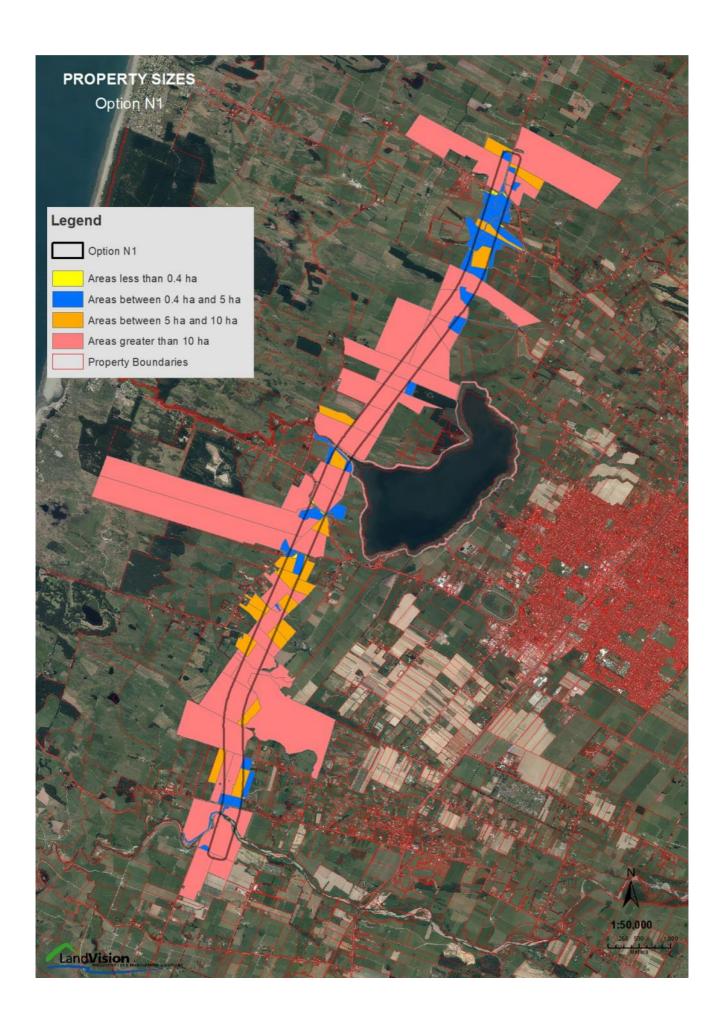
		MCA scoring	
Option	All properties included	Only properties greater than 10 ha included	Properties greater than 10 ha with HDC zones excluded
N1	2	2	2
N2	2	1	1
N3	3	1	1
N4	3	1	1
N5	3	2	2
N6	2	1	1
N7	3	3	2
N8	4	3	3
N9	4	3	2
S1	3	3	3
S2	3	3	3
\$3	3	3	3
\$4	4	3	3
\$5	4	4	4
S6	4	3	3
\$7	3/4*	3	3
S8	2	2	2

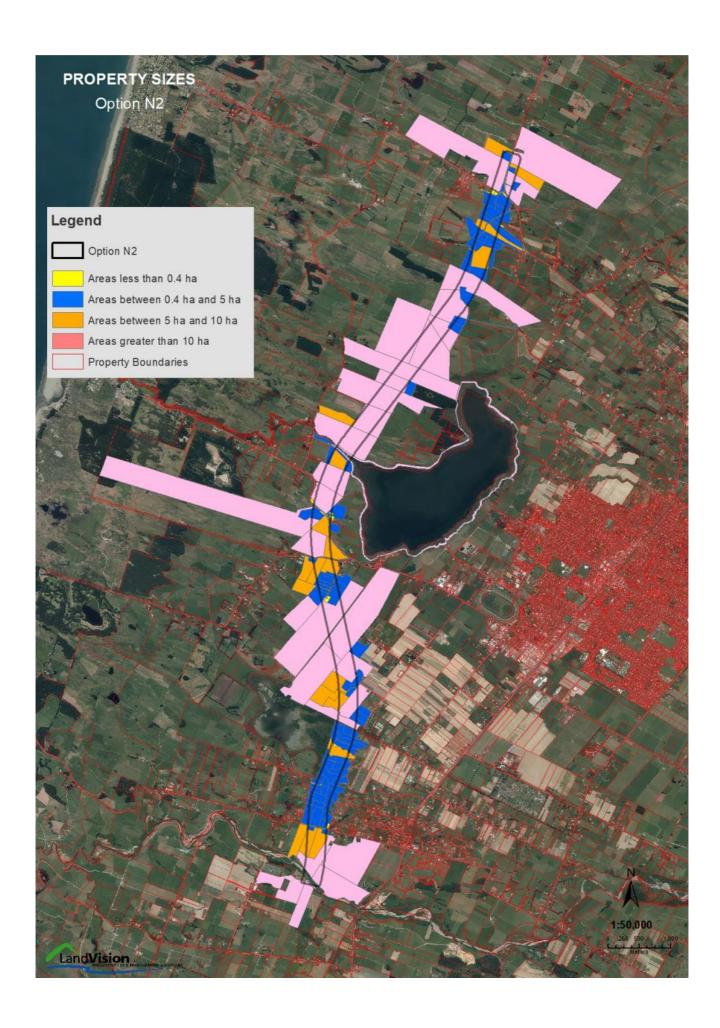
[* Authors comment: The agreed workshop scoring was 4 and the score recommended by the author at the workshop was 3. In review of this the author feels it could be a 3 or a 4.]

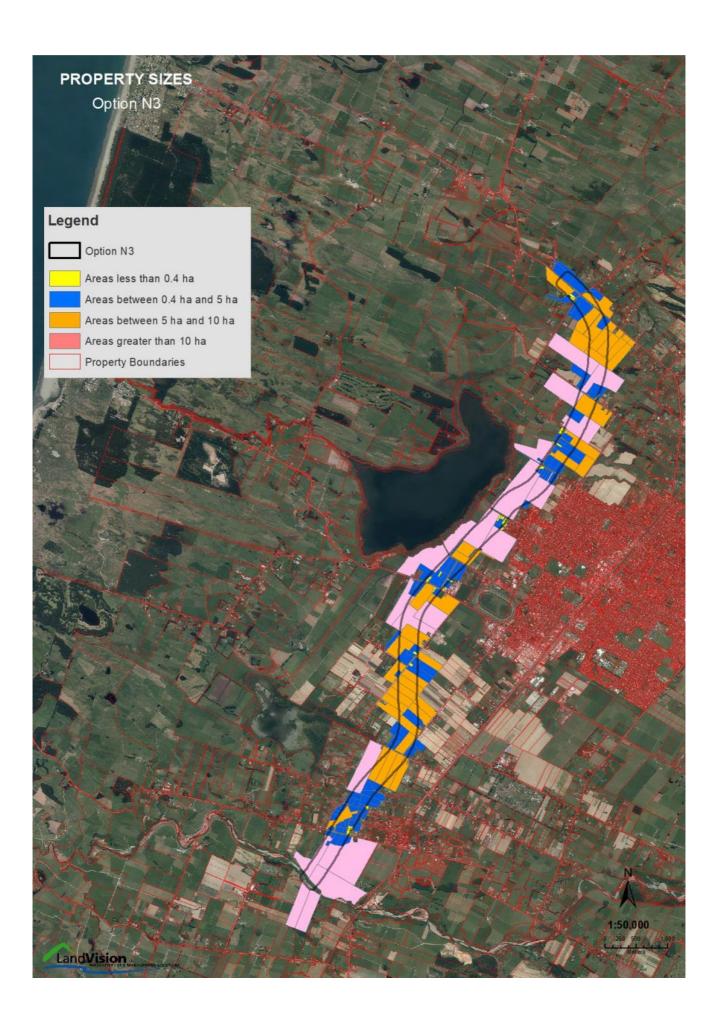
Table 8 above shows the following for when the options are re-scored:

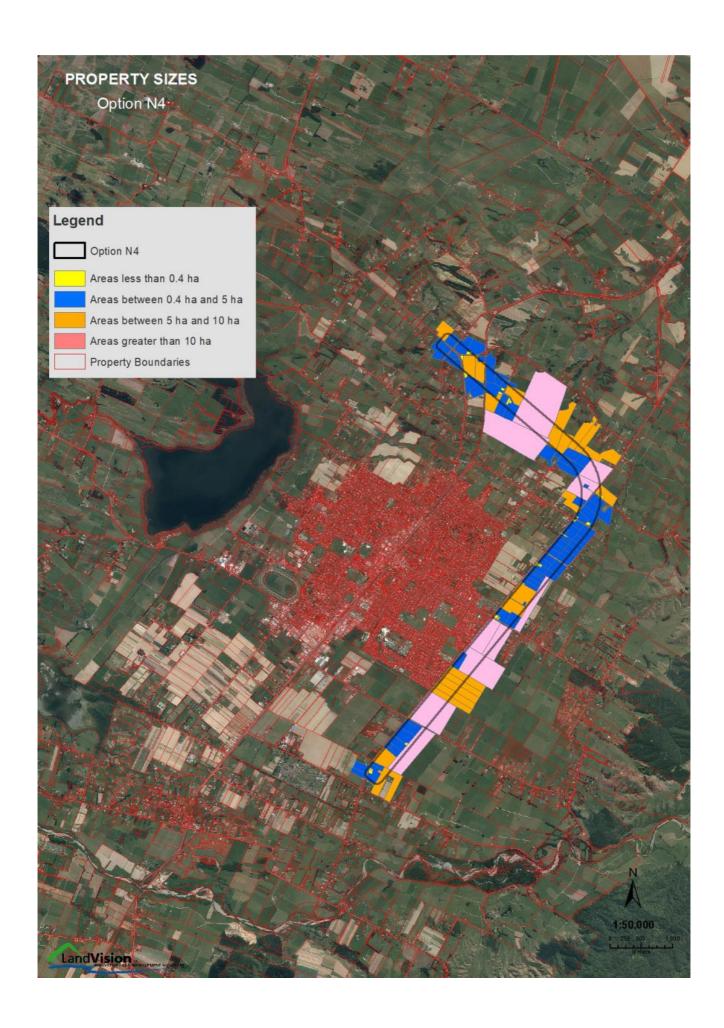
- 1. That the least impactive southern option is S8 and the most impactive is S5. There is very little difference between the remaining southern options.
- 2. On the northern side options N2, N3, N4 and N6 have the least impact on productive land when properties less than 10 ha are excluded whilst options N7, N8 and N9 are the most impactive.
- 3. On the northern side when both the HDC zones and those properties less than 10 ha are excluded the least impactive options are still N2, N3, N4 and N6.

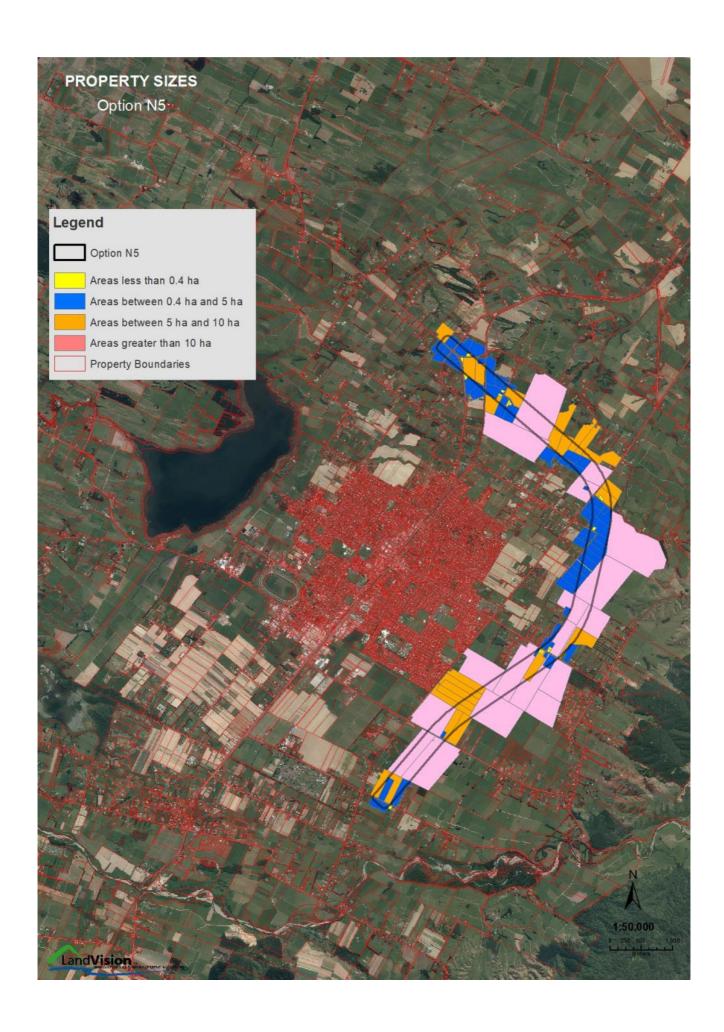
8 APPENDIX 1: AFFECTED PROPERTY MAPS

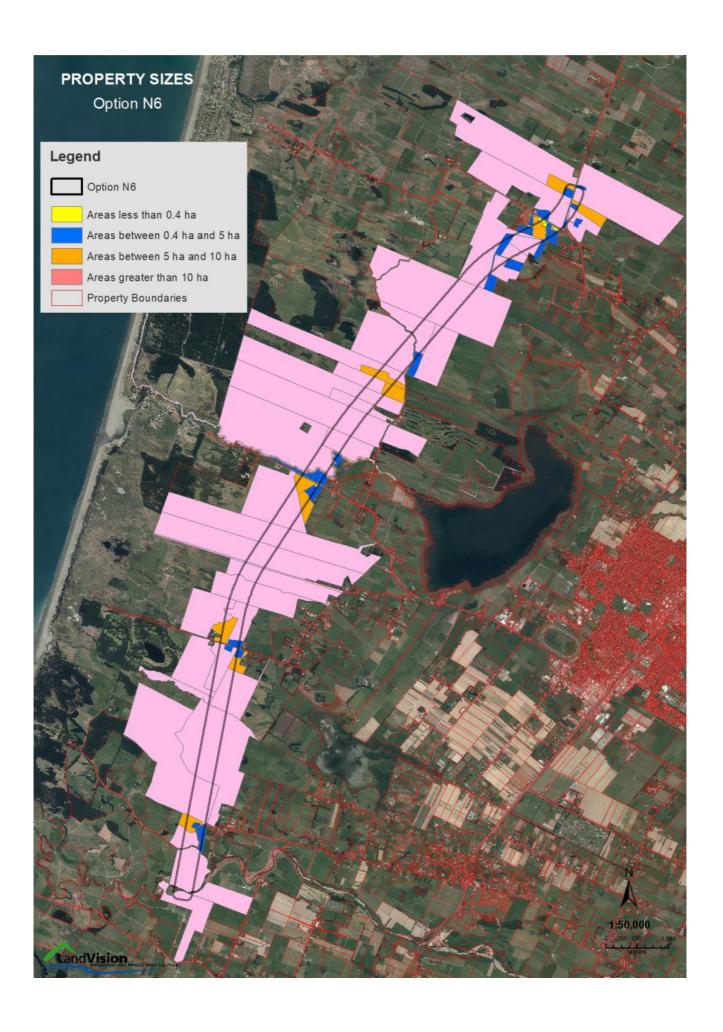


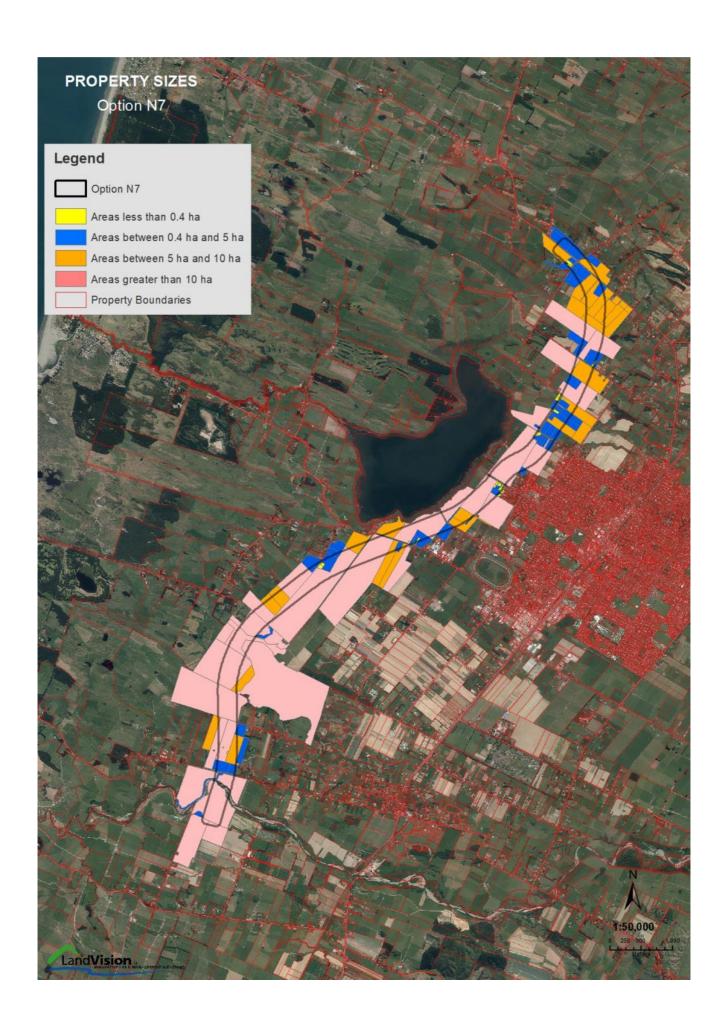


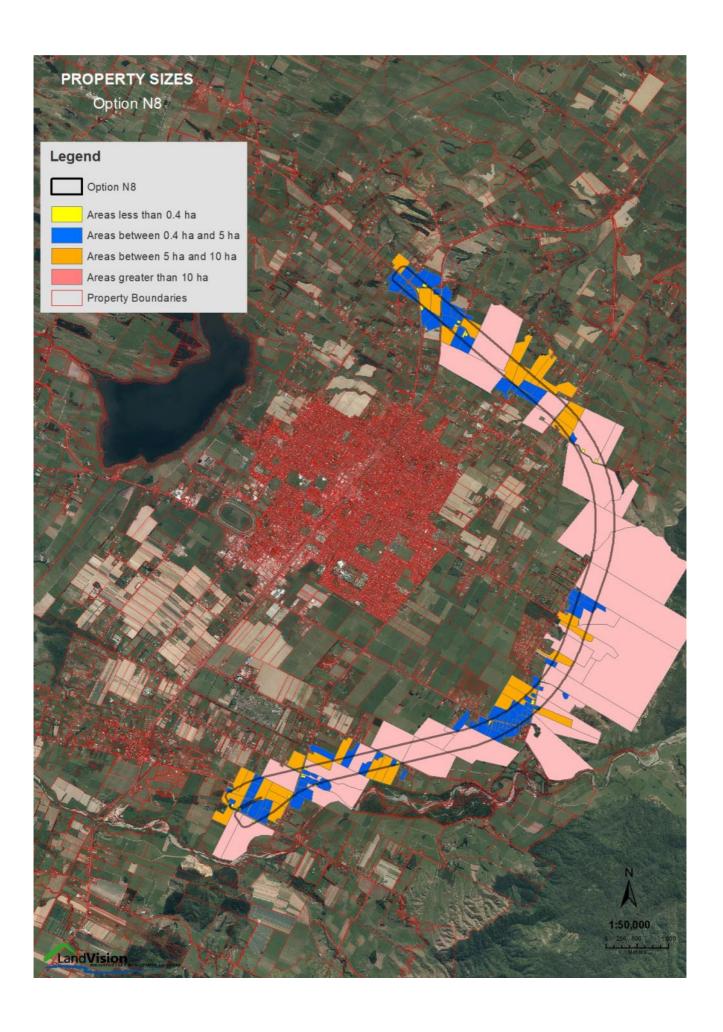


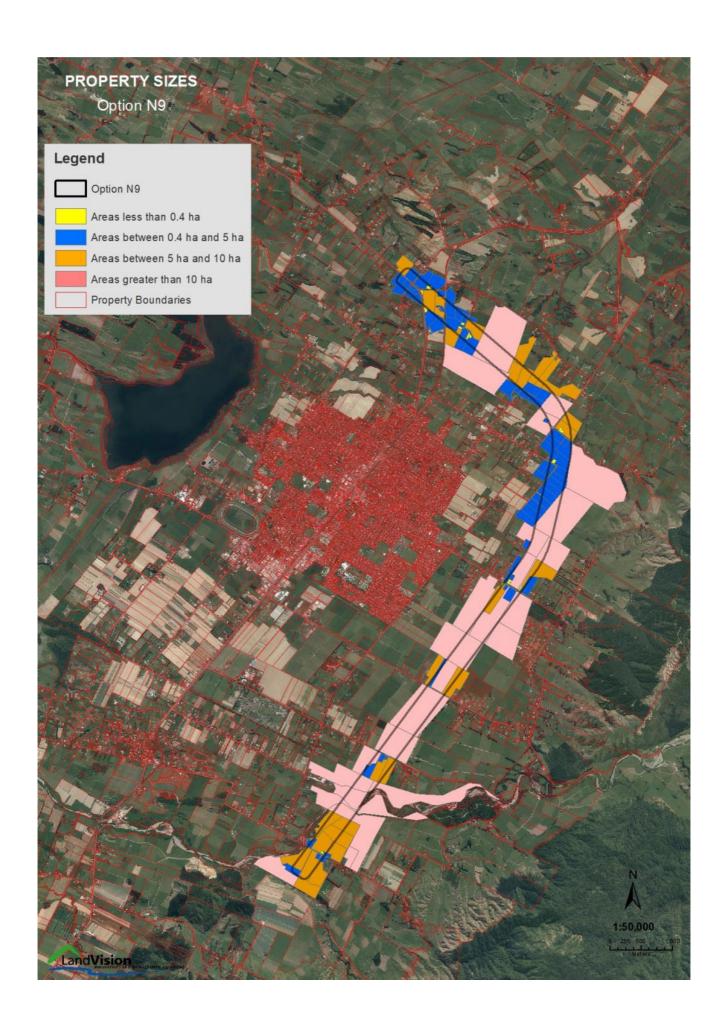


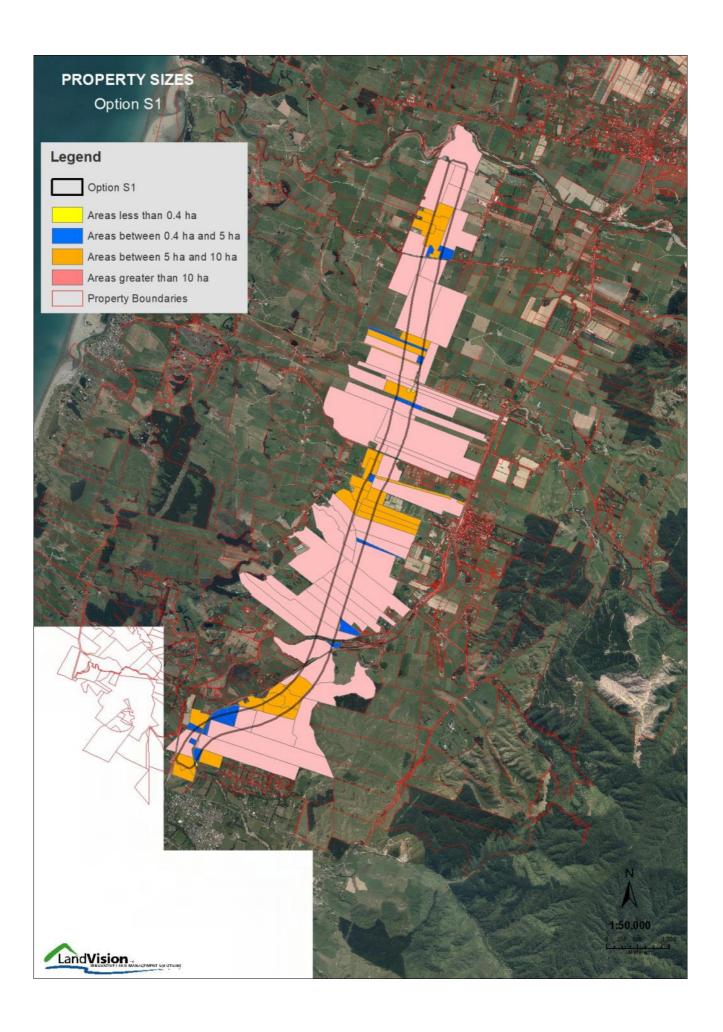


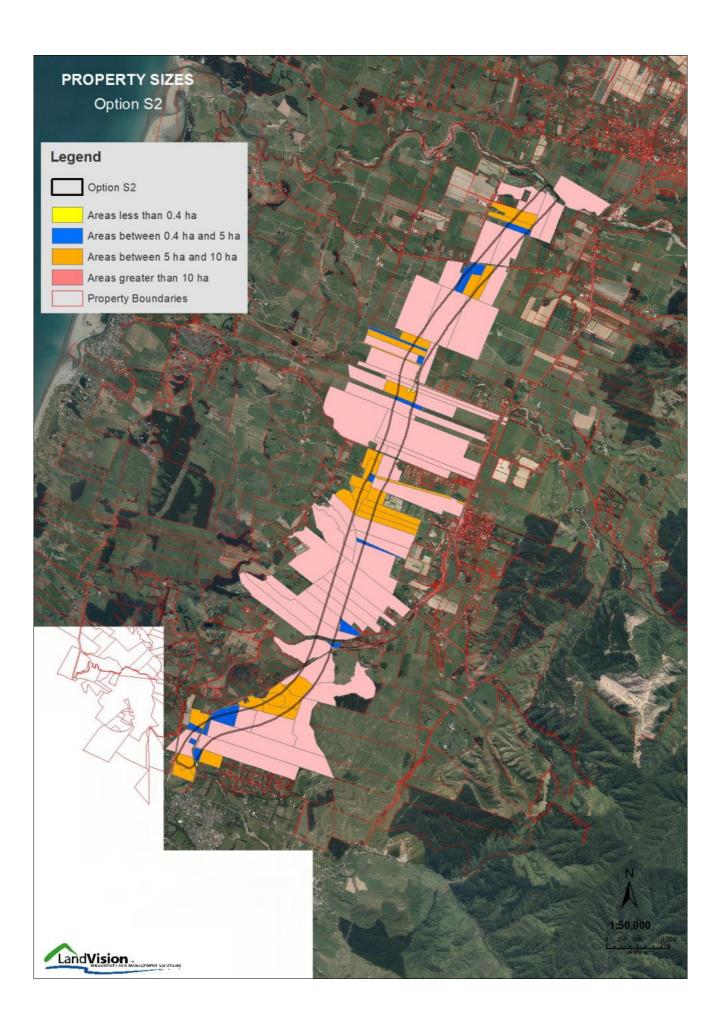


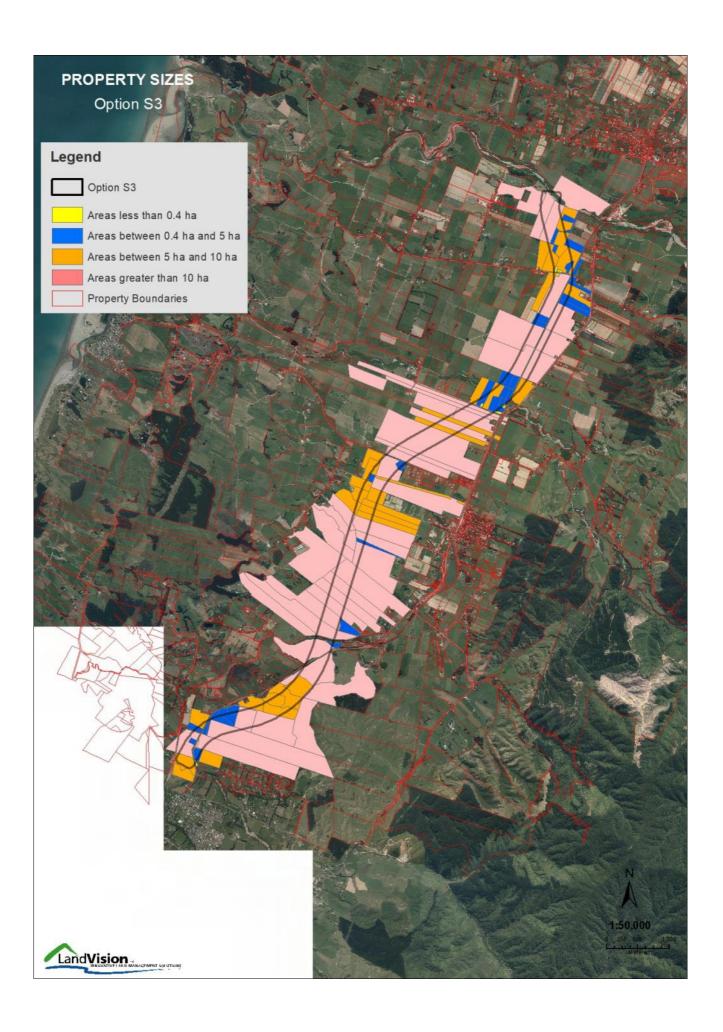


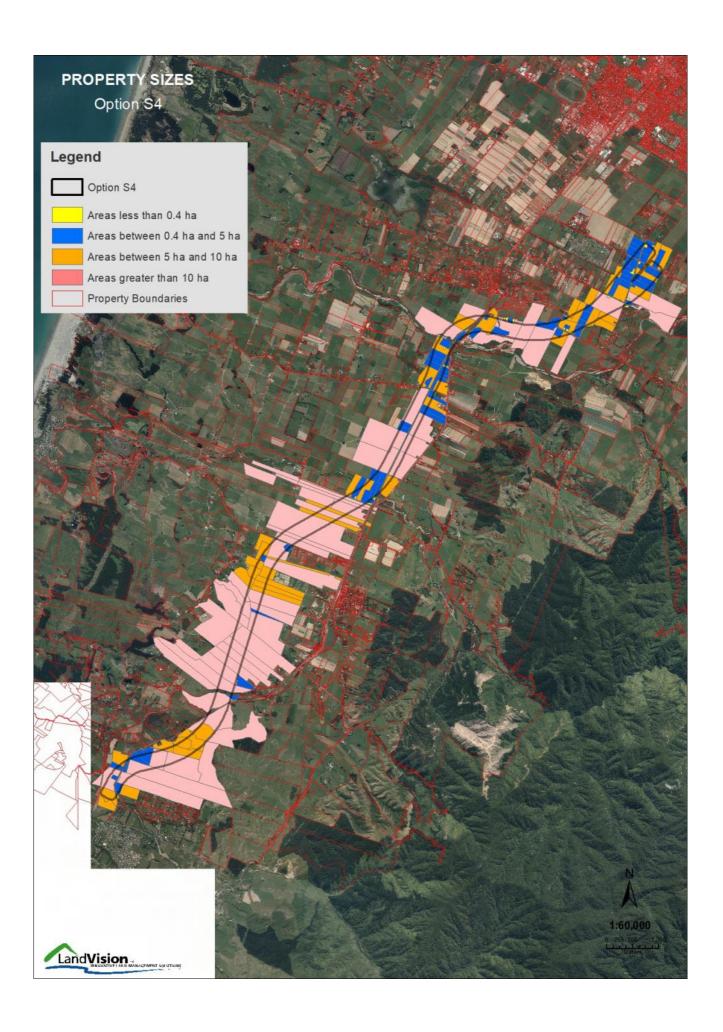


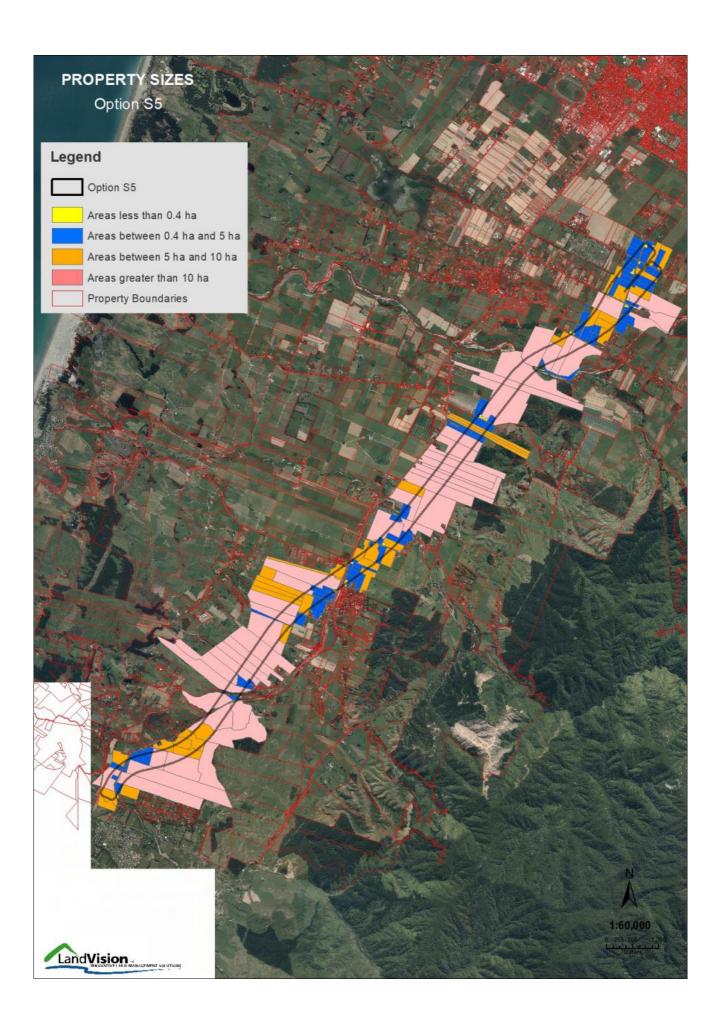


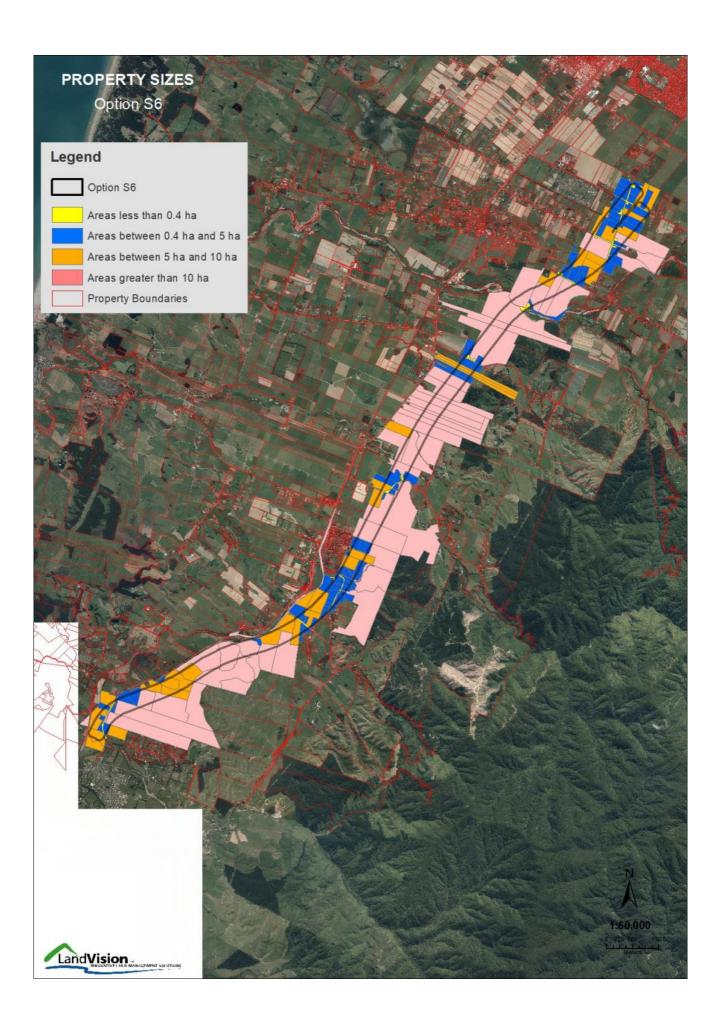


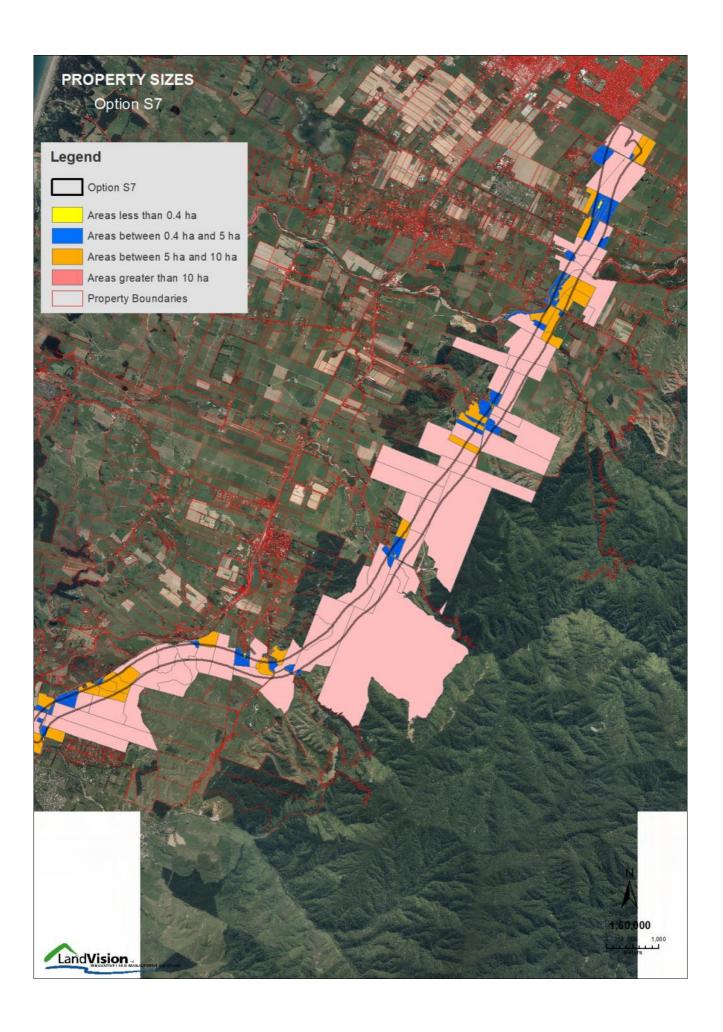


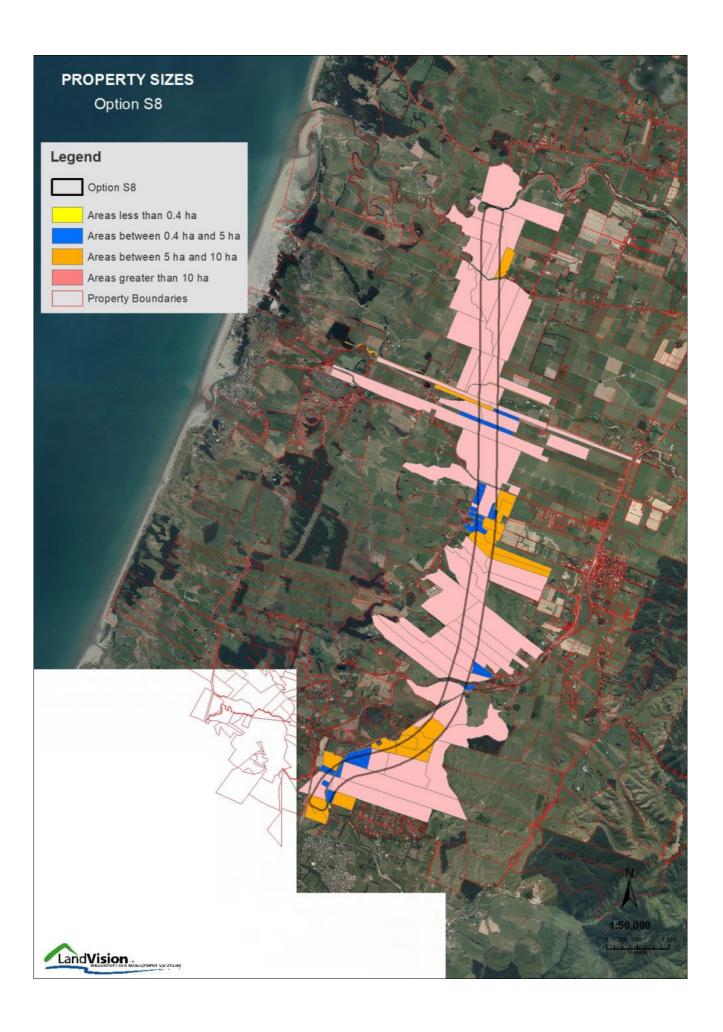












9 APPENDIX 2: PROPERTY AND ZONE MAPS

