

4 OUTPUTS

4.1 General

All information assembled and data derived during the screening project shall be stored by the screening consultant. It shall be kept readily available for subsequent review or detailed analysis for a period of at least ten years from delivery of the final report to Transit New Zealand, or longer if so requested by the Regional Manager, Transit New Zealand.

4.2 Outputs

The items to be delivered to Transit New Zealand on completion of a screening project shall be as listed below. Examples of the required outputs for (a), (c i) and (cii) below are included in Appendix F. Information shall be presented in a report in the following order:

- (a) A summary list of all structures on the highways covered by the screening report. The list shall include all totally and partially excluded structures (Sections 3.1 and 3.3).
- (b) A summary list of bridges, in order of decreasing ranking, that have been found to lack connections between superstructure elements (Section 3.3.2). The list shall also show the rough order cost of retrofitting to provide connections.
- (c) For the *group* of bridges in the batch screened:
 - (i) One printed copy of the completed summary spreadsheet that lists the seismic attributes grading values (Figure 5).
 - (ii) One printed copy of the summary spreadsheet (Figure 6), sorted by risk event in decreasing order of ranking in accordance with 3.11.2.
 - (iii) One printed copy of the summary spreadsheet (Figure 6), sorted by bridge in decreasing order of ranking in accordance with 3.11.3.2.
- (d) A summary list of bridges, in order of decreasing ranking in accordance with 3.11.3.2, that are considered to justify detailed seismic assessment of their seismic performance and of their possible justification of seismic retrofit. This list may include bridges also listed in (b) above, depending on what other seismic deficiencies have been identified.
- (e) A brief descriptive text on each bridge listed in (d) above, to summarise the risk events, treatment options, and aspects that influenced the choice of ranking of the risk events and the bridge as a whole.
- (f) A copy in A3 size, folded to A4, of the general arrangement drawings for each of the bridges listed in (b) and (d). The drawings of each bridge shall be placed immediately after the text (see (e) above) for that bridge.
- (g) For *each* bridge for which only Forms 1 (Part 1), 2 and 3 (Appendix B) are required to be completed (i.e. partially excluded bridges), one copy of the completed Forms 1 (Part 1), 2 and 3, as an appendix to the report.

Figure 5 Spreadsheet Format for Recording Seismic Attributes Grading Values

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	
2	SUMMARY OF SEISMIC ATTRIBUTES GRADES FOR BRIDGES IN TNZ REGION :																											
3																												
4	PREPARED BY, AND DATE :																											
5																												
6	CHECKED BY, AND DATE :																											
7																												
8	Sorted In Route Position Order																											
9																												
10	State Highway	Route Position	Bridge Name	Partially Excluded In Stage 3 of Screening Procedure Yes/No?	Seismic Attributes Grade (SAG)	Hazard Index	Importance Index	Vulnerability Index	Hazard Index Attribute Ratings				Importance Index Attribute Ratings				Vulnerability Index Attribute Ratings						Route Position Order					
11									Peak Ground Acceleration	Remaining Service Life	Soil Condition	Risk of Liquefaction Effect	AAADT On Bridge	Detour Effect	AAADT Under Bridge	Facility Crossed	Strategic Importance	Critical Utility	Year Designed	Super-structure Hinges	Super-structure Overlap	Super-structure Length	Pier Type	Bridge Skew	Abutment Type	Other Feature		
12					0.00	0.00	0.00	0.00																				1
13					0.00	0.00	0.00	0.00																				2
14					0.00	0.00	0.00	0.00																				3
15					0.00	0.00	0.00	0.00																				4
16					0.00	0.00	0.00	0.00																				5
17					0.00	0.00	0.00	0.00																				6
18					0.00	0.00	0.00	0.00																				7
19					0.00	0.00	0.00	0.00																				8
20					0.00	0.00	0.00	0.00																				9
21					0.00	0.00	0.00	0.00																				10
22					0.00	0.00	0.00	0.00																				11
23					0.00	0.00	0.00	0.00																				12
24					0.00	0.00	0.00	0.00																				13
25					0.00	0.00	0.00	0.00																				14
26					0.00	0.00	0.00	0.00																				15
27					0.00	0.00	0.00	0.00																				16
28					0.00	0.00	0.00	0.00																				17
29					0.00	0.00	0.00	0.00																				18
30					0.00	0.00	0.00	0.00																				19
31					0.00	0.00	0.00	0.00																				20
32					0.00	0.00	0.00	0.00																				21
33					0.00	0.00	0.00	0.00																				22
34					0.00	0.00	0.00	0.00																				23
35					0.00	0.00	0.00	0.00																				24
36					0.00	0.00	0.00	0.00																				25
37					0.00	0.00	0.00	0.00																				26
38					0.00	0.00	0.00	0.00																				27
39					0.00	0.00	0.00	0.00																				28
40					0.00	0.00	0.00	0.00																				29
41					0.00	0.00	0.00	0.00																				30
42					0.00	0.00	0.00	0.00																				31
43					0.00	0.00	0.00	0.00																				32
44					0.00	0.00	0.00	0.00																				33
45					0.00	0.00	0.00	0.00																				34
46					0.00	0.00	0.00	0.00																				35
47					0.00	0.00	0.00	0.00																				36
48	ATTRIBUTE WEIGHTING FACTORS :																											
49						0.40	0.30	0.15	0.15	0.50	0.50	0.10	0.15	0.15	0.10	0.25	0.08	0.10	0.12	0.15	0.05	0.10	0.15					
50	AAADT on Bridge x Detour Effect x 0.5 for these two combined attribute indices																											
51	Sorted In order of Seismic Attributes Grade																											
52																												
53	State Highway	Route Position	Bridge Name	Partially Excluded In Stage 3 of Screening Procedure Yes/No?	Seismic Attributes Grade (SAG)	SAG Ranking																						
54						1																						
55						2																						
56						3																						
57						4																						
58						5																						
59						6																						
60						7																						
61						8																						
62						9																						
63						10																						
64						11																						
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NOTES:

1. Seismic Attributes Grade = Hazard Index x Importance Index x Vulnerability Index
2. With sheet protected, columns E, F, G, H and AA of the upper table are protected, as is column F of the lower table.
3. Data is entered into the upper table to calculate the values of Hazard, Importance and Vulnerability indices, and the SAG.
4. Data is copied to columns A to E of the lower table and sorted by descending value of SAG to obtain the ranking order. Note that the contents of column E must be copied to the lower table as "Values".
5. Refer to the Appendix C for detailed steps for using the spreadsheet.

