

Appendix I: LSN Maps

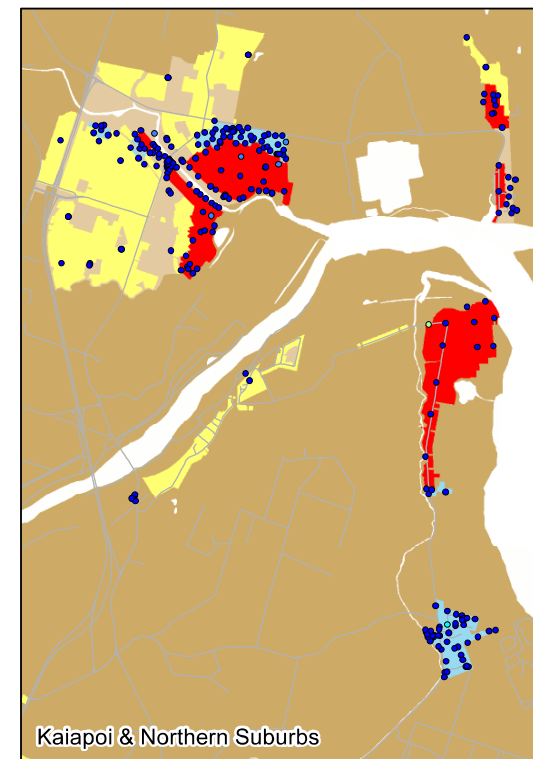
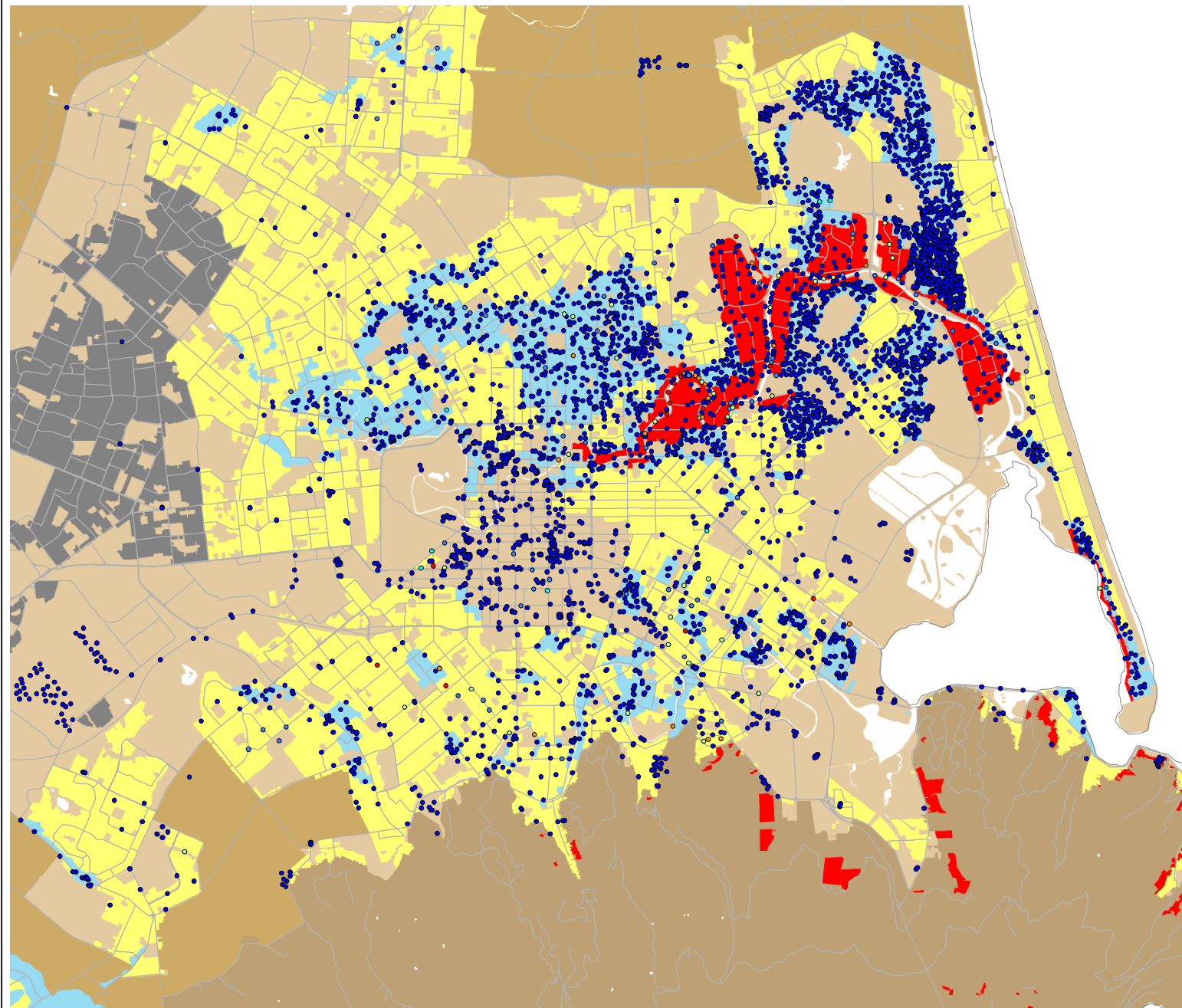
ENVIRONMENTAL AND ENGINEERING CONSULTANTS



Figure Index

MAP	Magnitude	PGA (g)	MAP No
LSN based on Median Groundwater	M6	0.08	I1
LSN based on Median Groundwater	M6	0.10	I2
LSN based on Median Groundwater	M6	0.13	I3
LSN based on Median Groundwater	M6	0.15	I4
LSN based on Median Groundwater	M6	0.18	I5
LSN based on Median Groundwater	M6	0.22	I6
LSN based on Median Groundwater	M6	0.27	I7
LSN based on Median Groundwater	M6	0.35	I8
LSN based on Median Groundwater	M6	0.40	I9
LSN based on Median Groundwater	M7.5	0.08	I10
LSN based on Median Groundwater	M7.5	0.10	I11
LSN based on Median Groundwater	M7.5	0.13	I12
LSN based on Median Groundwater	M7.5	0.15	I13
LSN based on Median Groundwater	M7.5	0.18	I14
LSN based on Median Groundwater	M7.5	0.22	I15
LSN based on Median Groundwater	M7.5	0.27	I16
LSN based on Median Groundwater	M7.5	0.35	I17
LSN based on Median Groundwater	M7.5	0.40	I18

Magnitude 6 Event



LEGEND

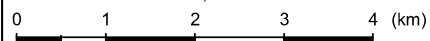
LSN	DBH Technical Category
● 0 - 10	TC3
● 10 - 20	TC2
● 20 - 30	TC1
● 30 - 40	N/A - Port Hills & Banks Peninsula
● 40 - 50	N/A - Urban Nonresidential
● 50 - 60	N/A - Rural & Unmapped
● 60+	

CERA Residential Zone

Red Zone

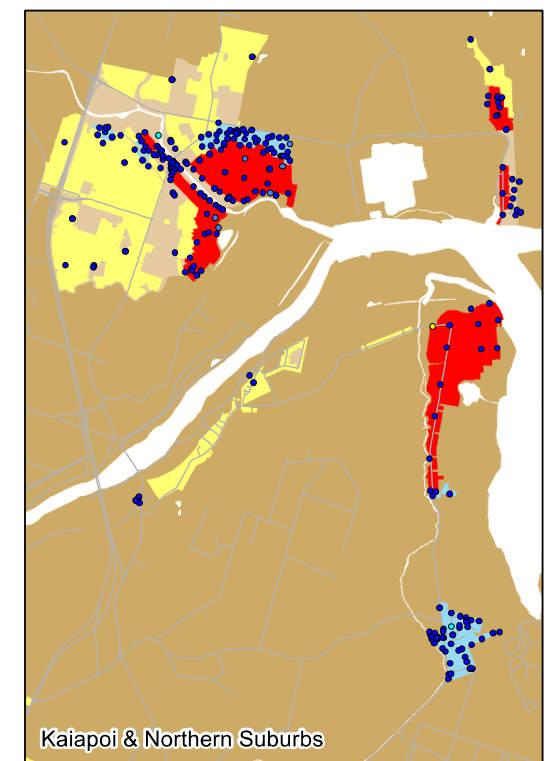
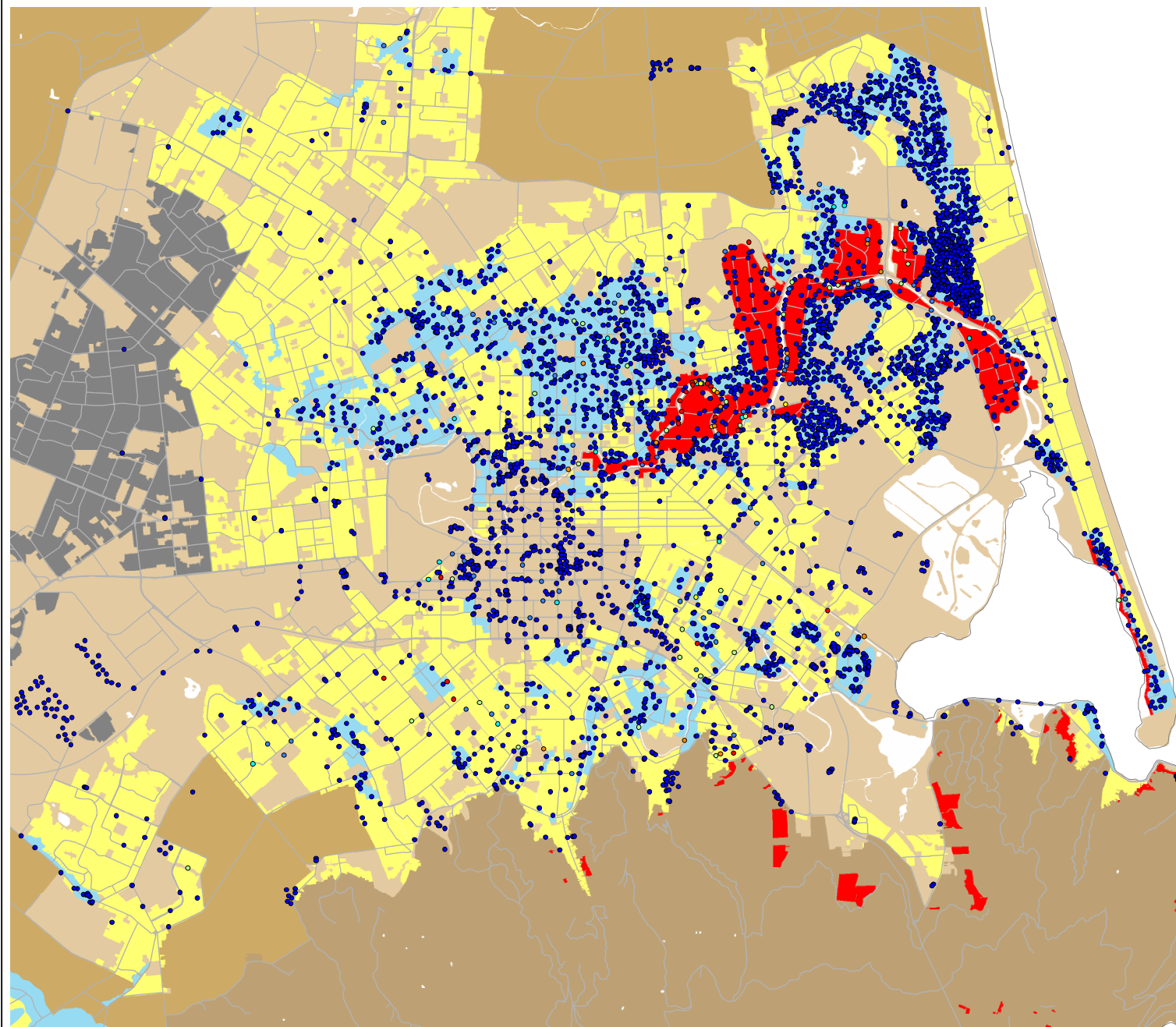
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A3 SCALE 1:60,000



DRAWN	CXP	Feb.13
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APPROVED		
ARCFILE	52020-0200-LSN058	
SCALE (AT A3 SIZE)	1:60,000	
Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M6, PGA 0.08g)



LEGEND

LSN	DBH Technical Category
● 0 - 10	TC3
● 10 - 20	TC2
● 20 - 30	TC1
● 30 - 40	N/A - Port Hills & Banks Peninsula
● 40 - 50	N/A - Urban Nonresidential
● 50 - 60	N/A - Rural & Unmapped
● 60+	CERA Residential Zone
	Red Zone

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A3 SCALE 1:60,000
0 1 2 3 4 (km)

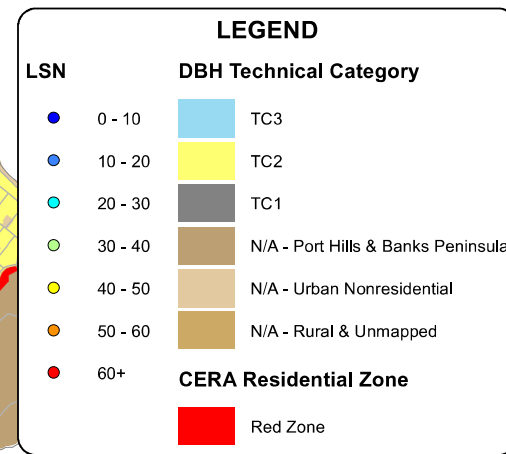
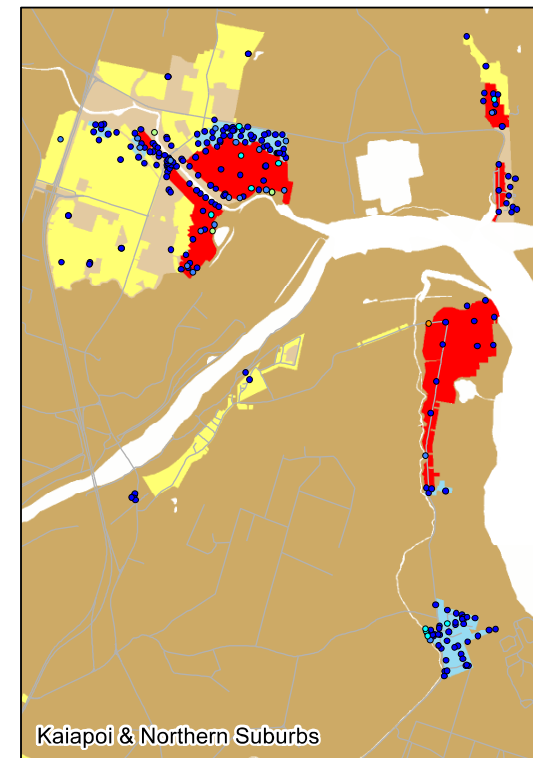
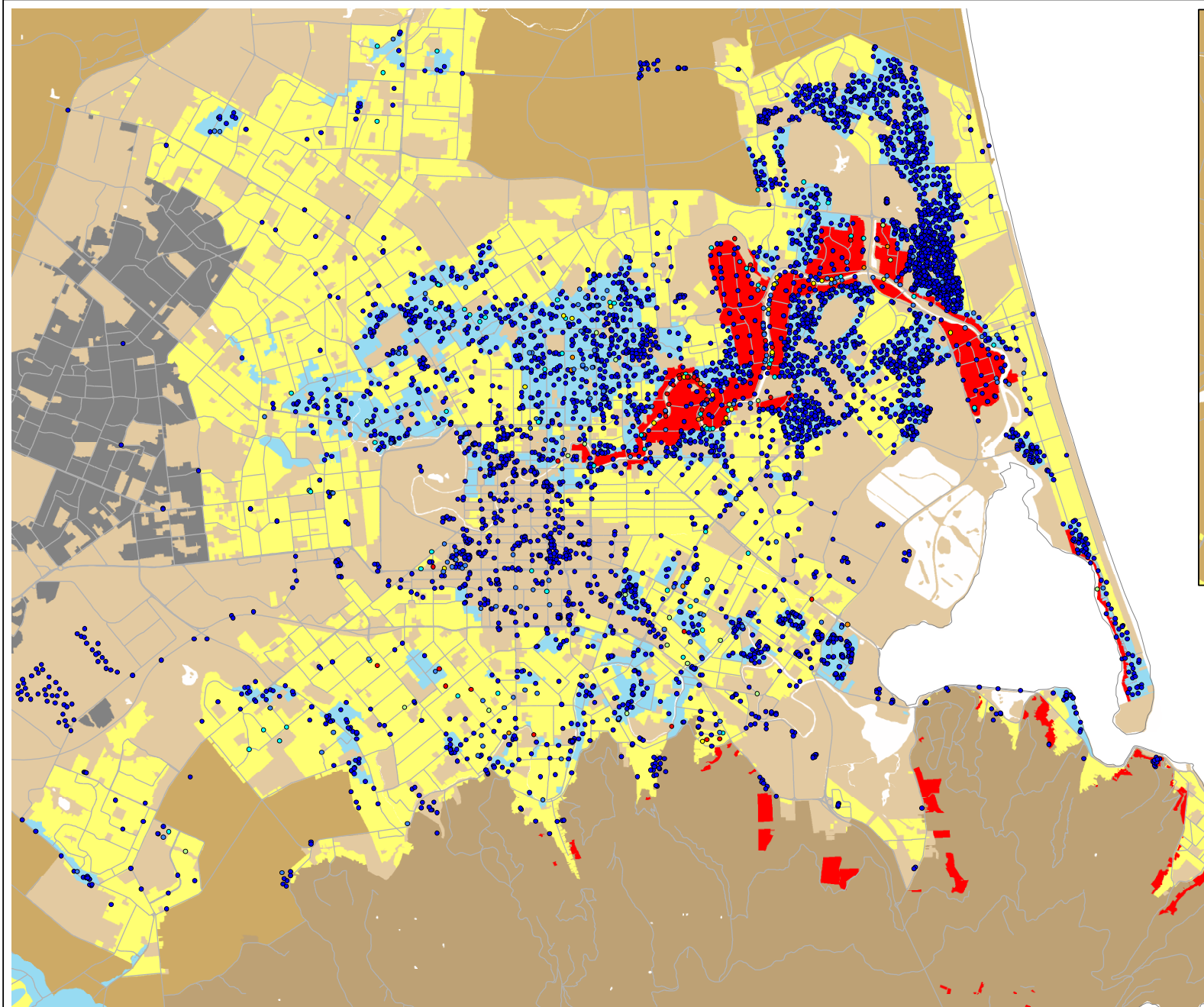


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Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth (M6, PGA 0.10g)

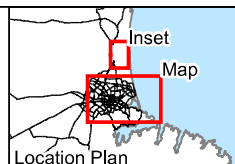
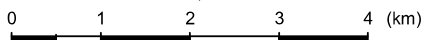
FIGURE No. **Figure I2** Rev. 0

Date: 26/02/2013 Time: 11:41:38 a.m.



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CHECKED		
APPROVED		
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Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

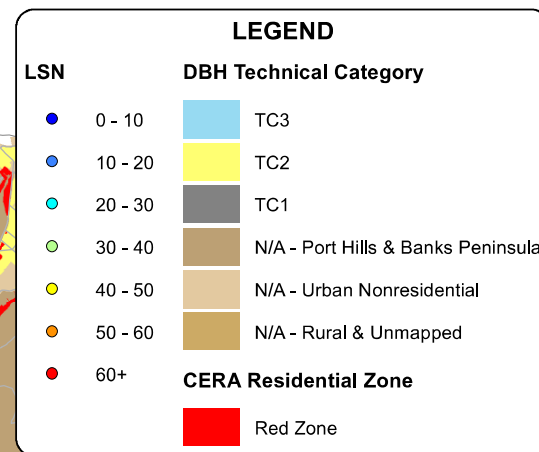
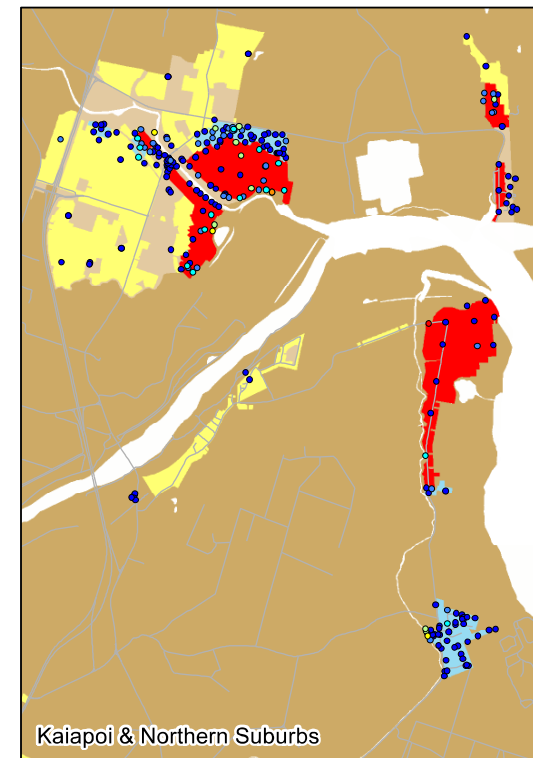
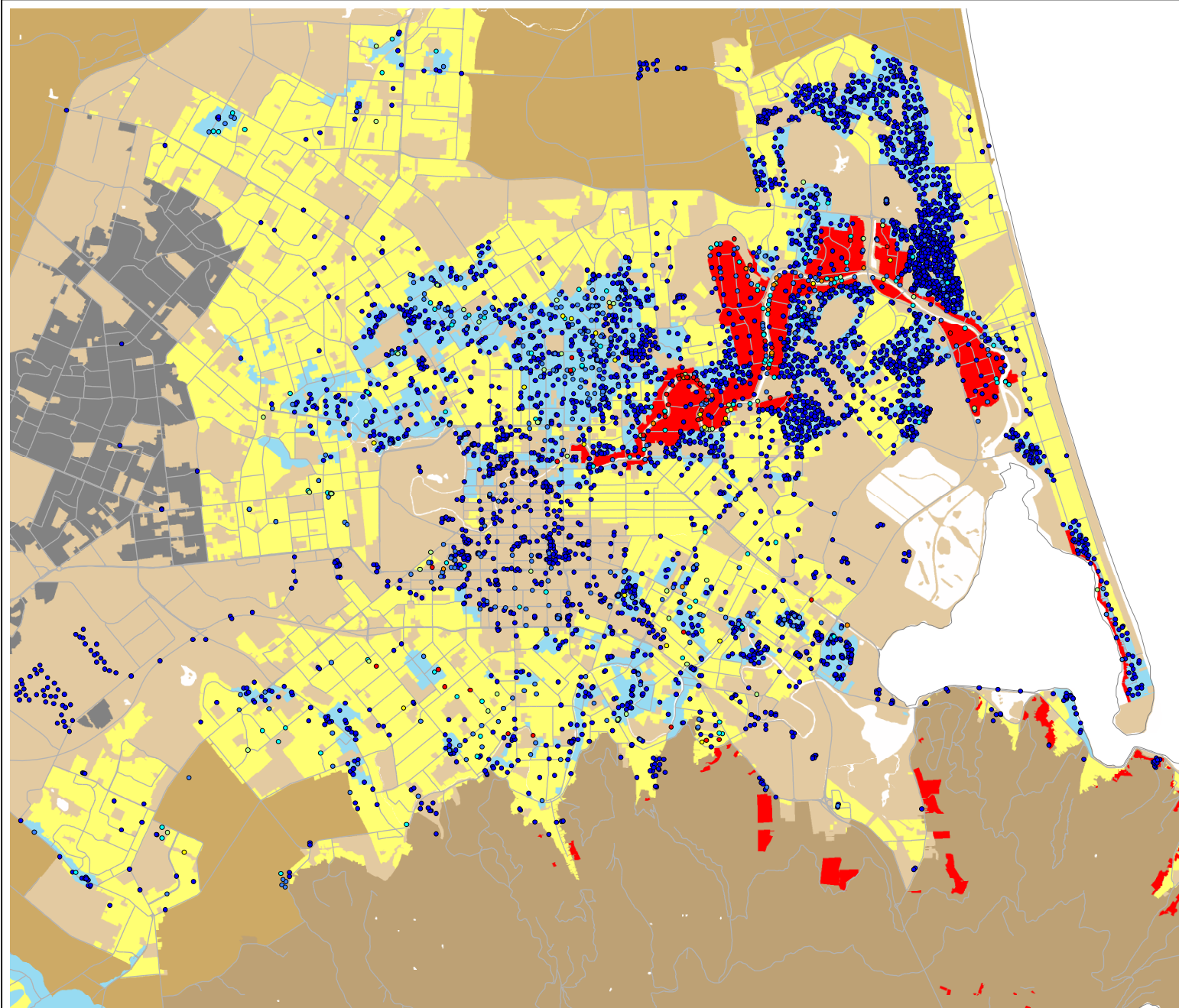
EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M6, PGA 0.13g)

FIGURE No.

Figure I3

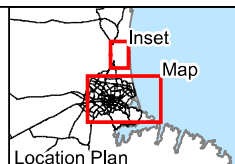
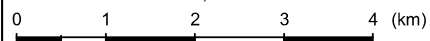
Rev.

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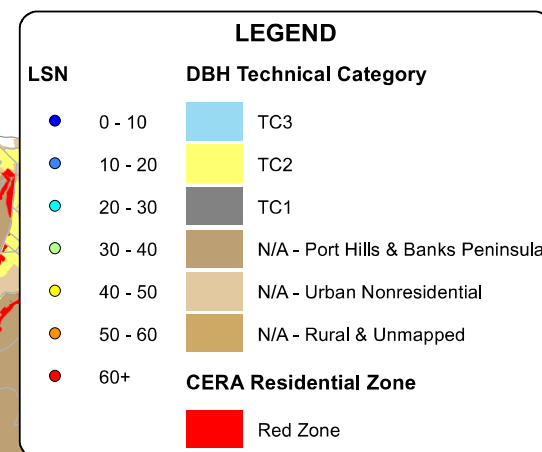
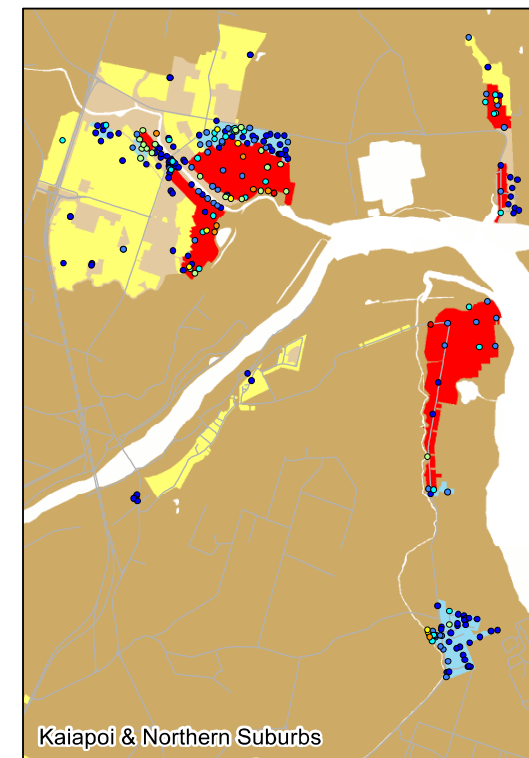
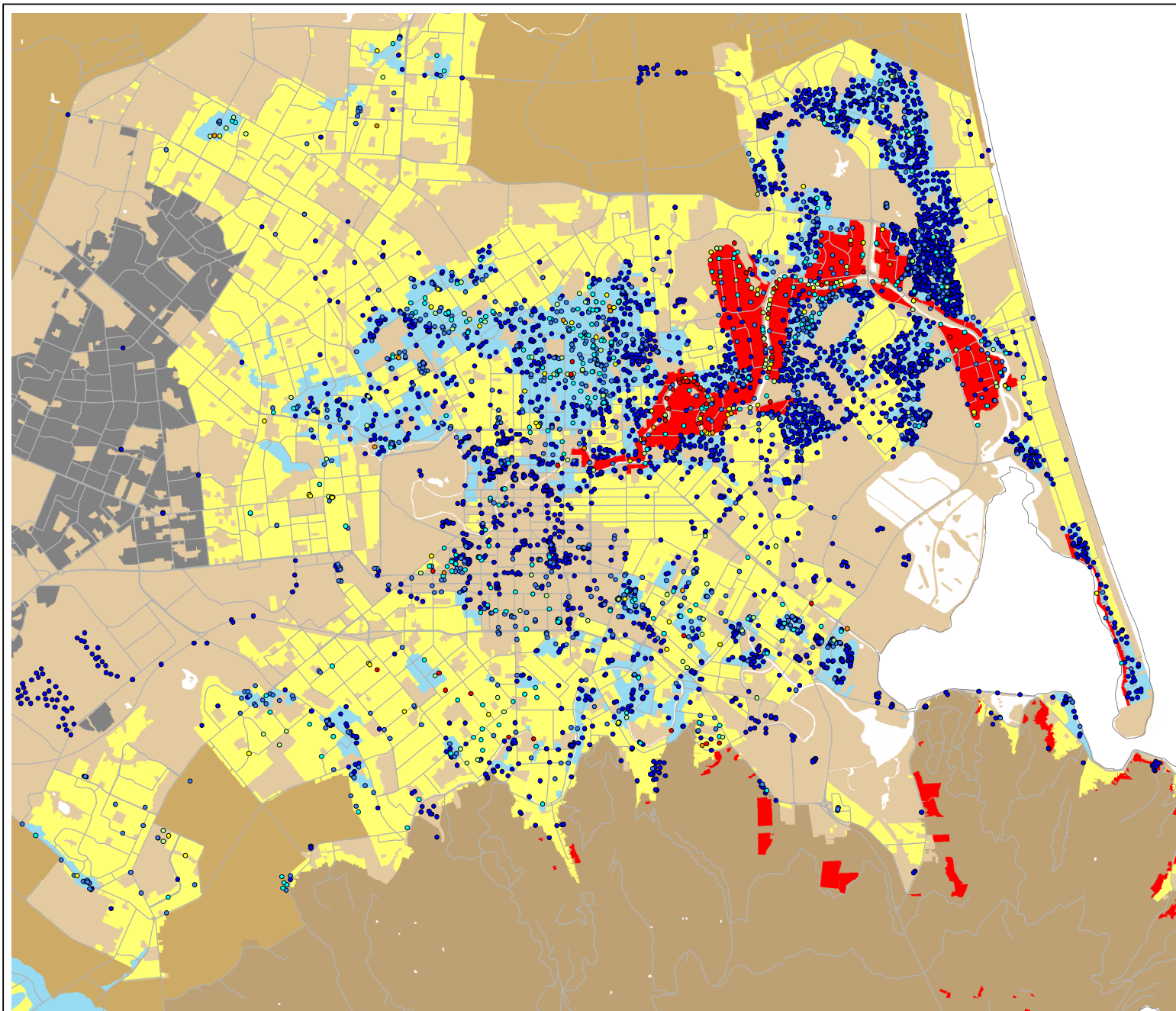
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Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

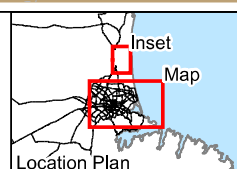
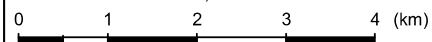
EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M6, PGA 0.15g)

FIGURE No. **Figure I4** Rev. 0



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A3 SCALE 1:60,000

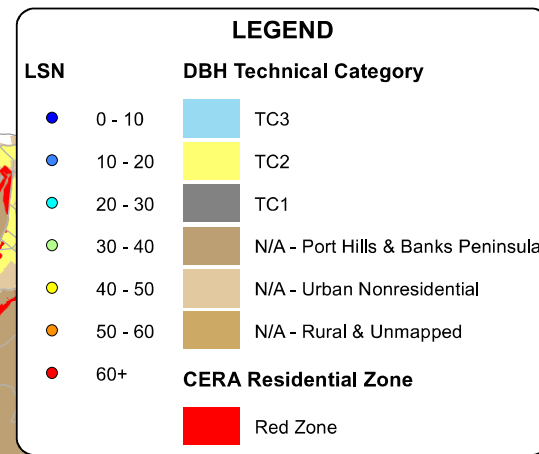
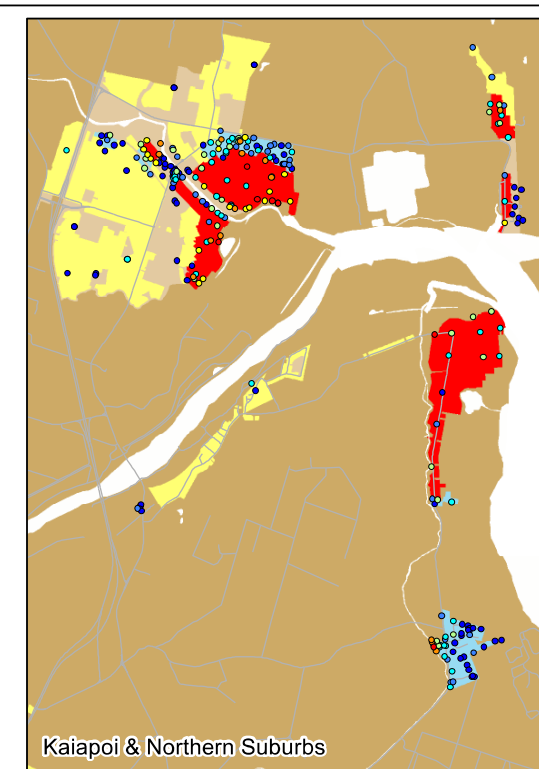
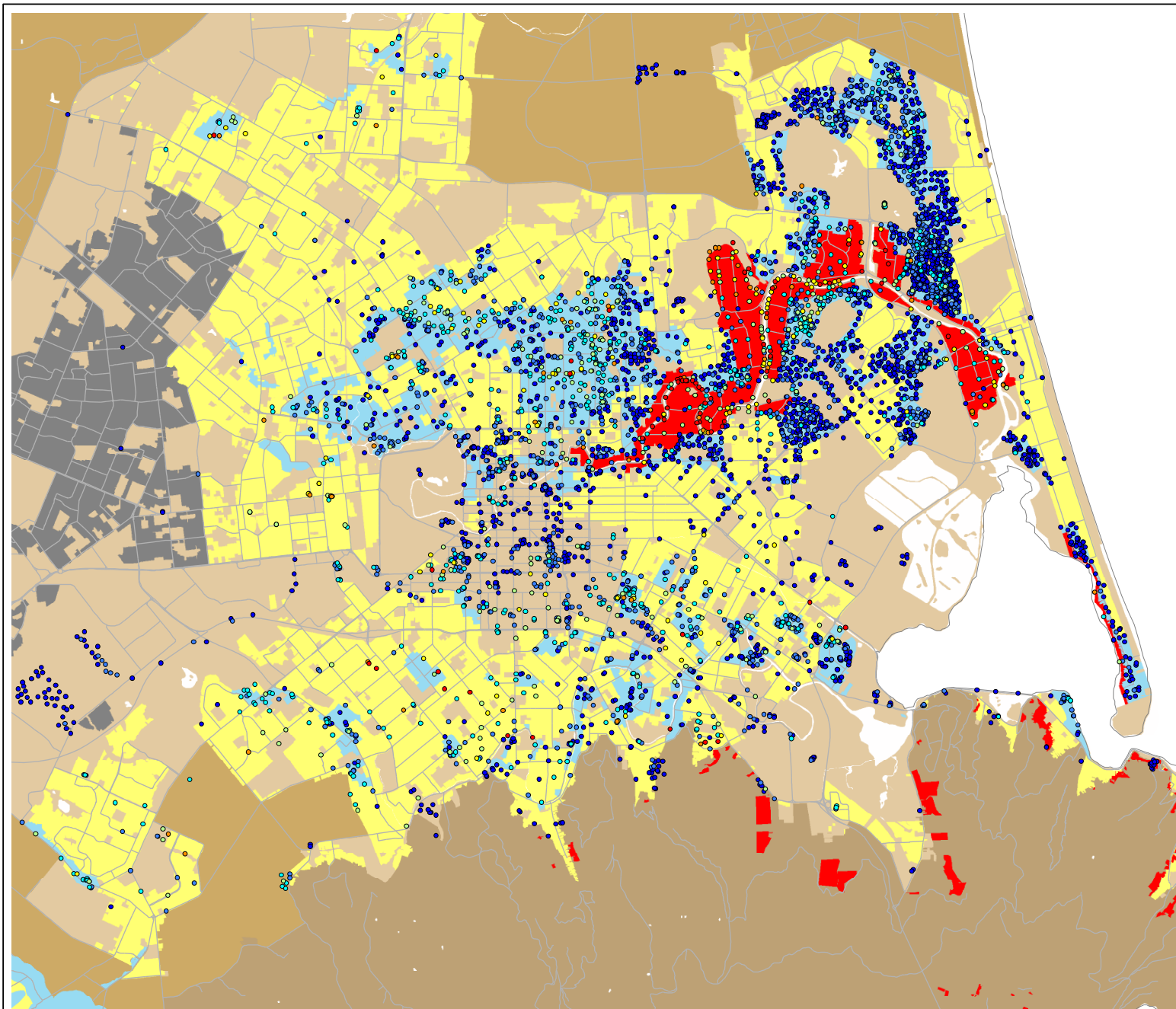


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Kōmihana Rūwhenua

DRAWN	CXP	Feb.13
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APPROVED		
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SCALE (AT A3 SIZE)	1:60,000	
Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

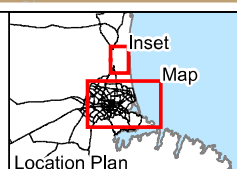
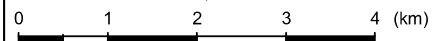
EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
LSN based on the Median Groundwater Depth
(M6, PGA 0.18g)

FIGURE No. **Figure I5** Rev. 0



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A3 SCALE 1:60,000

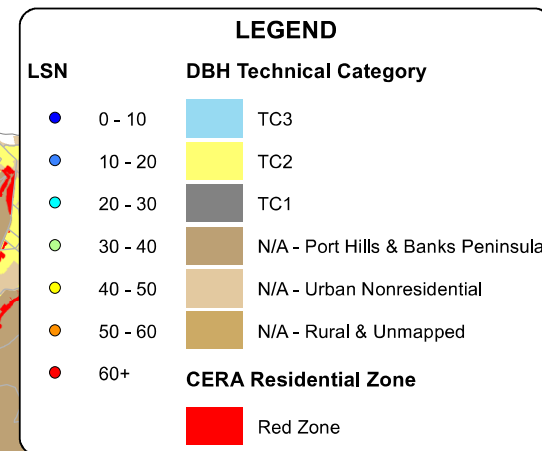
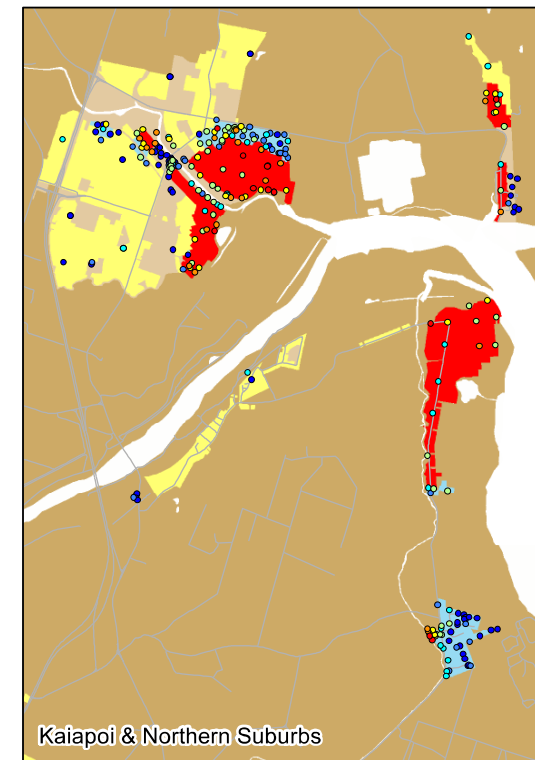
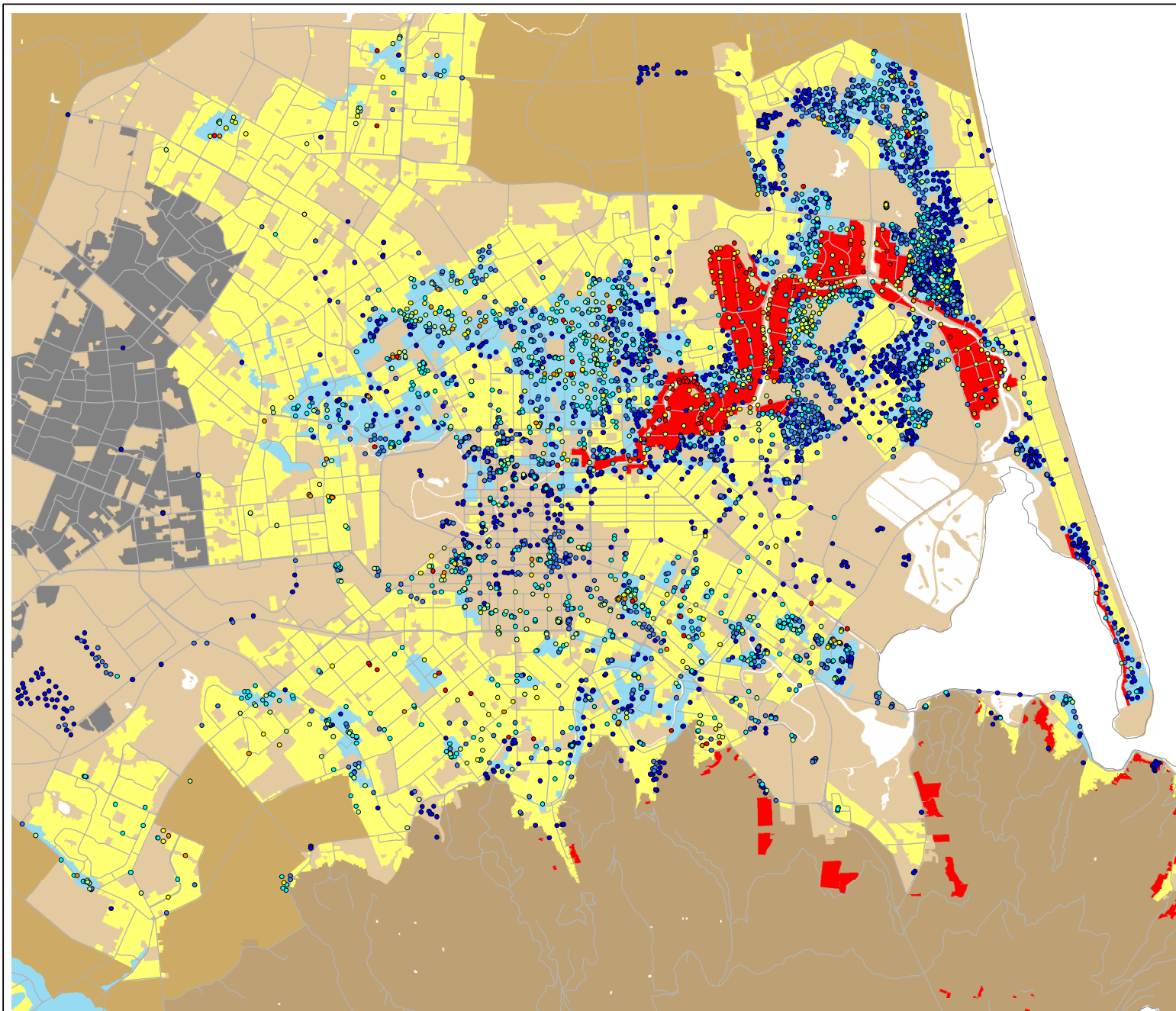


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EARTHQUAKE COMMISSION
Kōmihana Rūwhenua

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ARCFILE 52020-0200-LSN063		
SCALE (AT A3 SIZE) 1:60,000		
Prepared by Tonkin & Taylor Ltd. Ref: 52020.0200		

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
LSN based on the Median Groundwater Depth
(M6, PGA 0.22g)

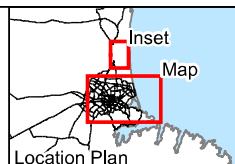
FIGURE No. Figure I6
Rev. 0



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A3 SCALE 1:60,000

0 1 2 3 4 (km)



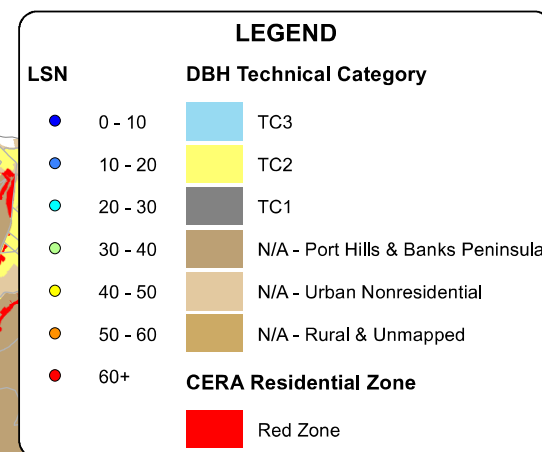
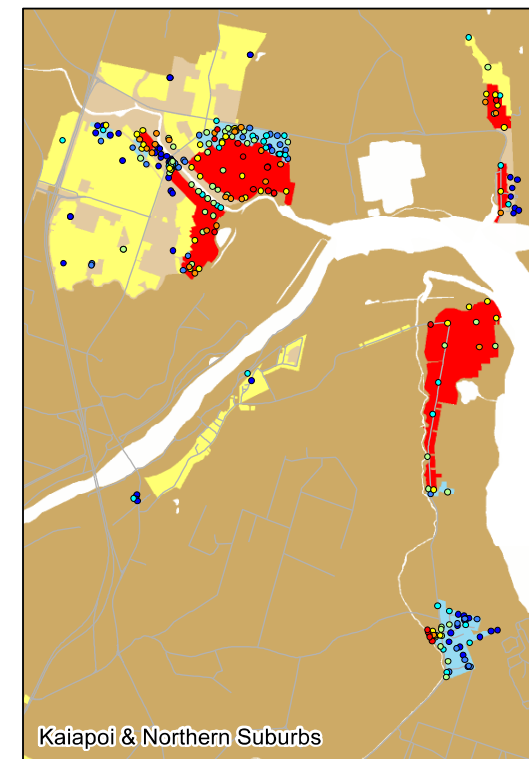
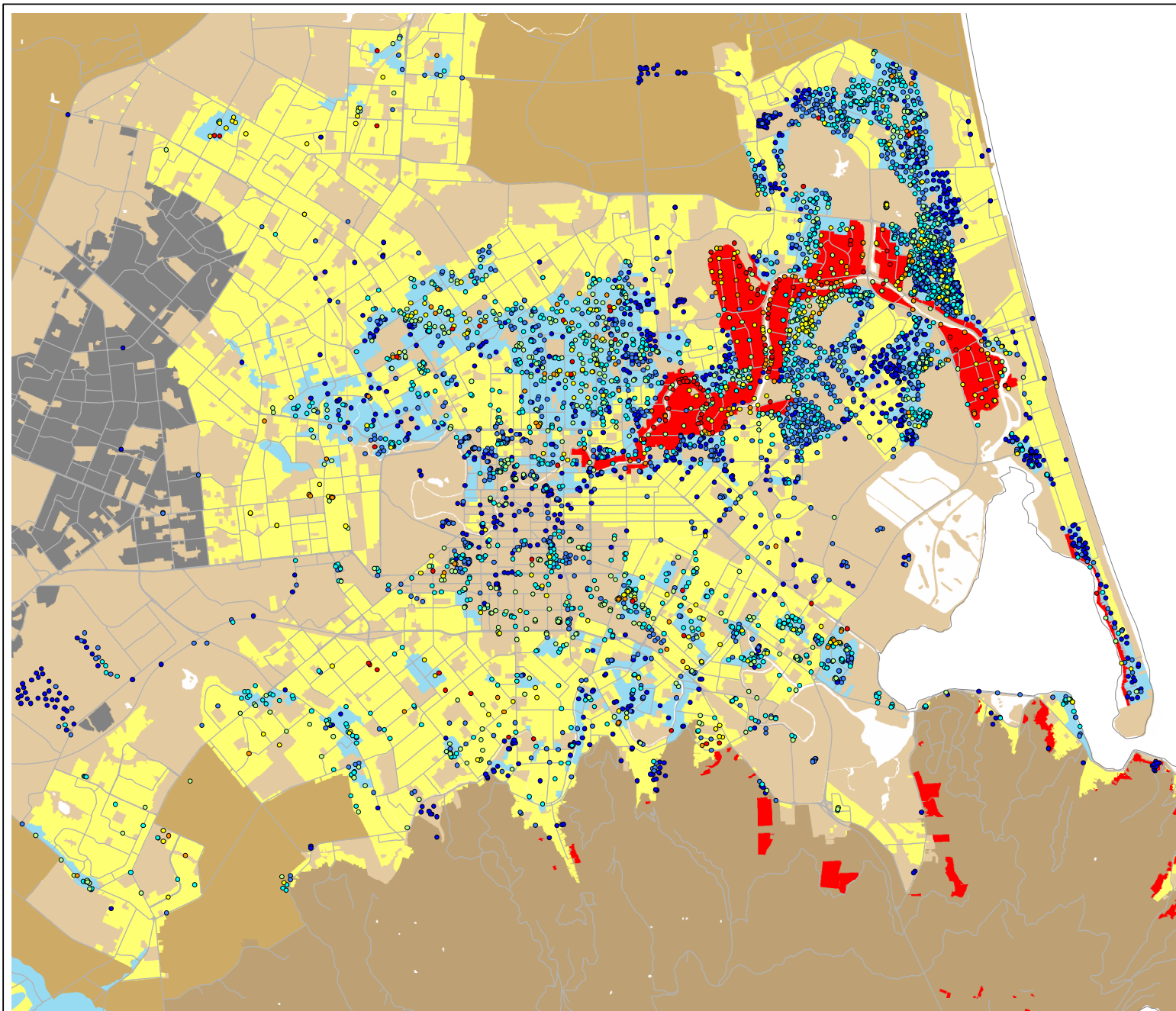
EQC
EARTHQUAKE COMMISSION
Kōmihana Rūwhenua

DRAWN	CXP	Feb.13
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ARCFILE 52020-0200-LSN064		
SCALE (AT A3 SIZE) 1:60,000		
Prepared by Tonkin & Taylor Ltd. Ref: 52020.0200		

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
LSN based on the Median Groundwater Depth
(M6, PGA 0.27g)

FIGURE No. Figure I7

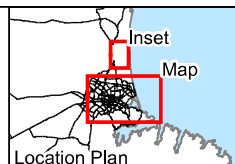
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A3 SCALE 1:60,000

0 1 2 3 4 (km)



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DRAWN	CXP	Feb.13
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APPROVED		
ARCFILE 52020-0200-LSN065		
SCALE (AT A3 SIZE) 1:60,000		
Prepared by Tonkin & Taylor Ltd. Ref: 52020.0200		

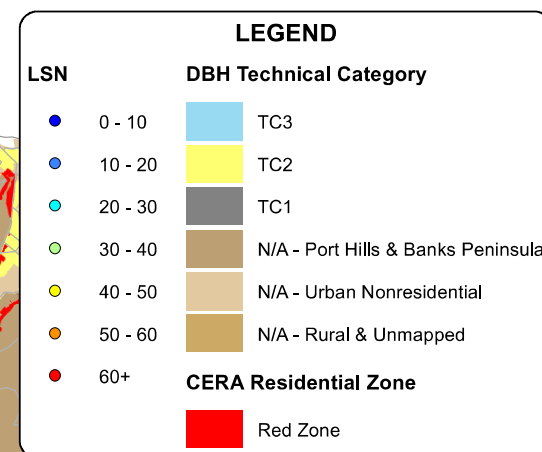
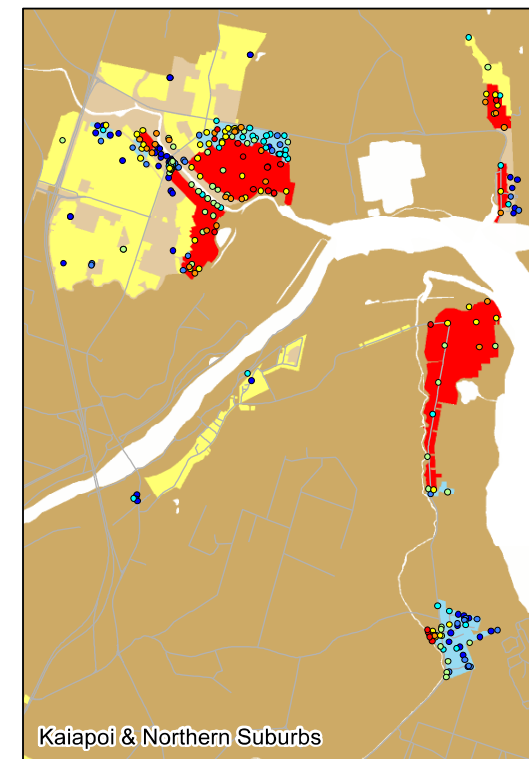
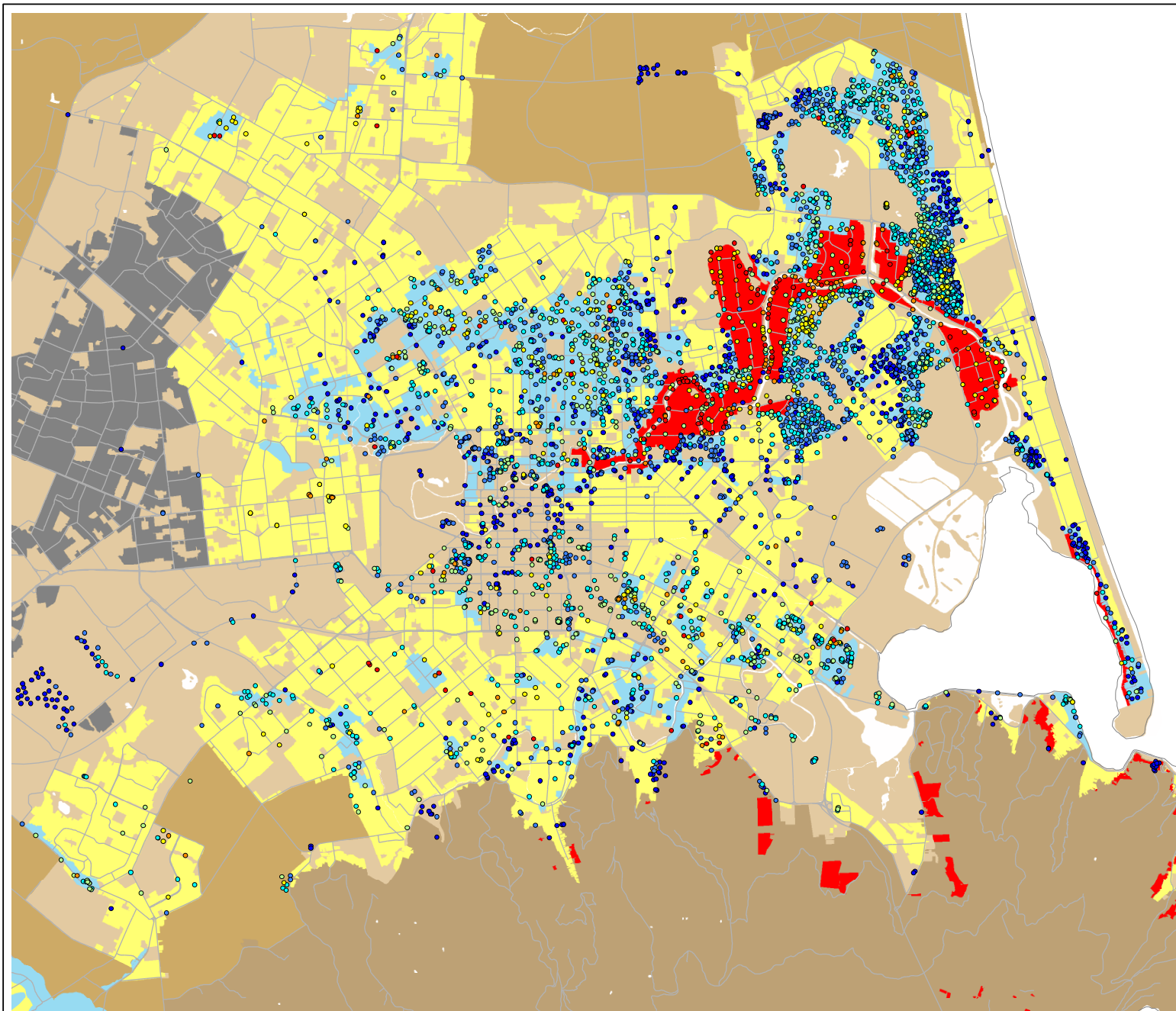
EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
LSN based on the Median Groundwater Depth
(M6, PGA 0.35g)

FIGURE No.

Figure I8

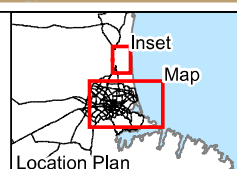
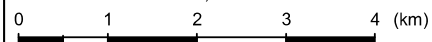
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A3 SCALE 1:60,000



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DRAWN	CXP	Feb.13
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ARCFILE 52020-0200-LSN066		
SCALE (AT A3 SIZE) 1:60,000		
Prepared by Tonkin & Taylor Ltd. Ref: 52020.0200		

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
LSN based on the Median Groundwater Depth
(M6, PGA 0.40g)

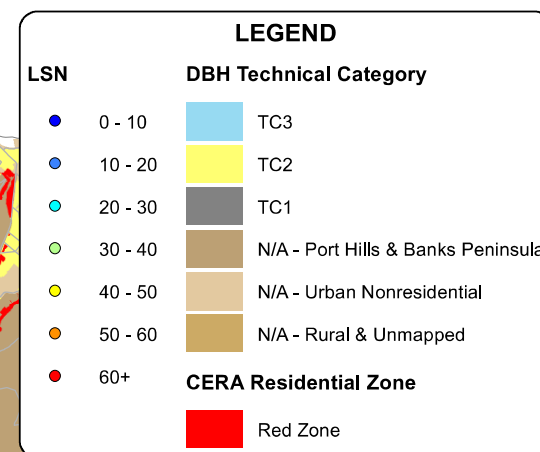
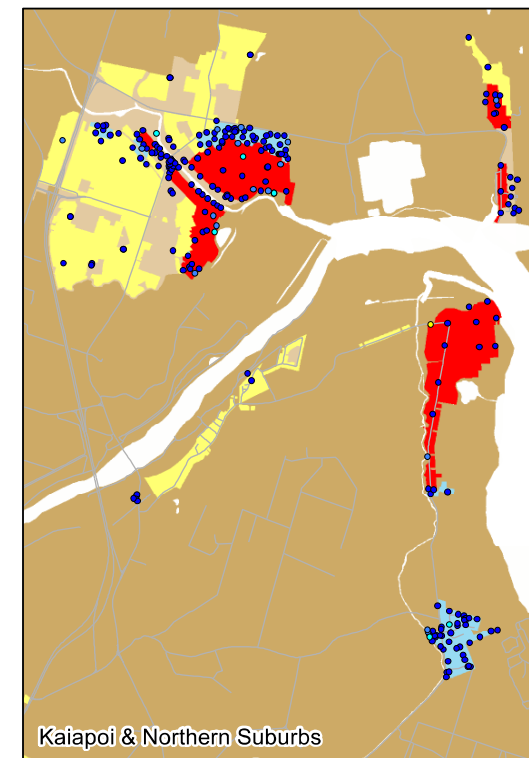
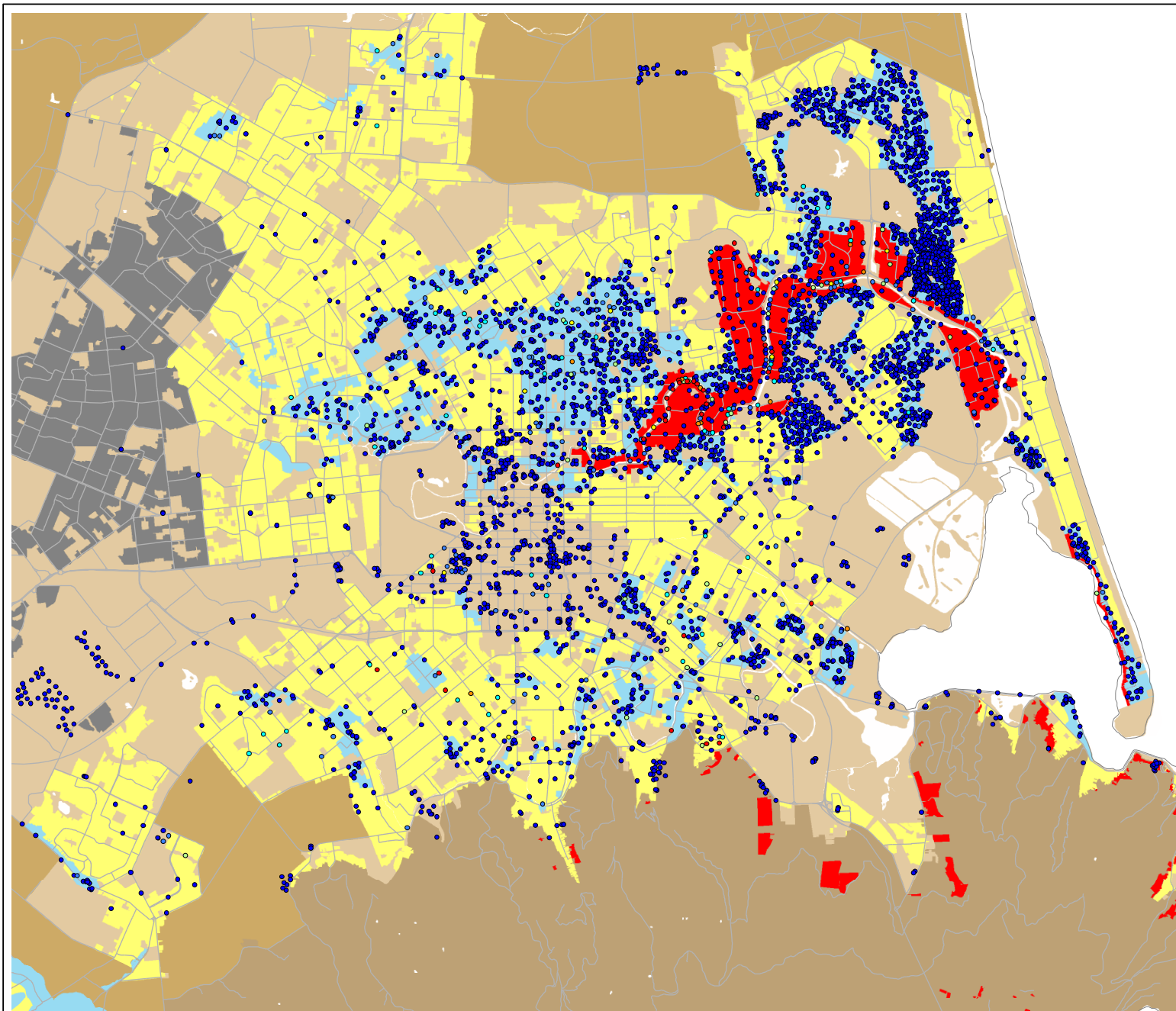
FIGURE No.

Figure I9

Rev.

0

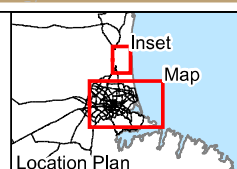
Magnitude 7.5 Event



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A3 SCALE 1:60,000

0 1 2 3 4 (km)



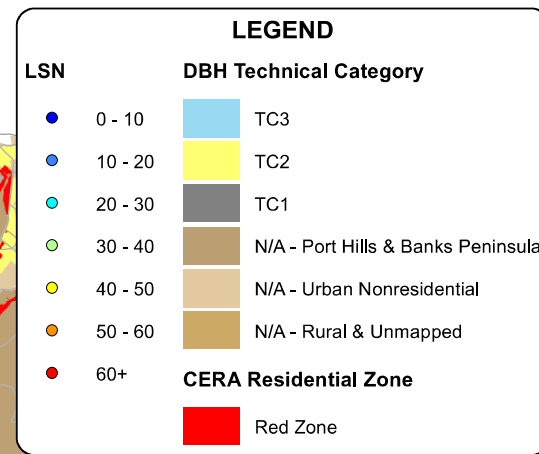
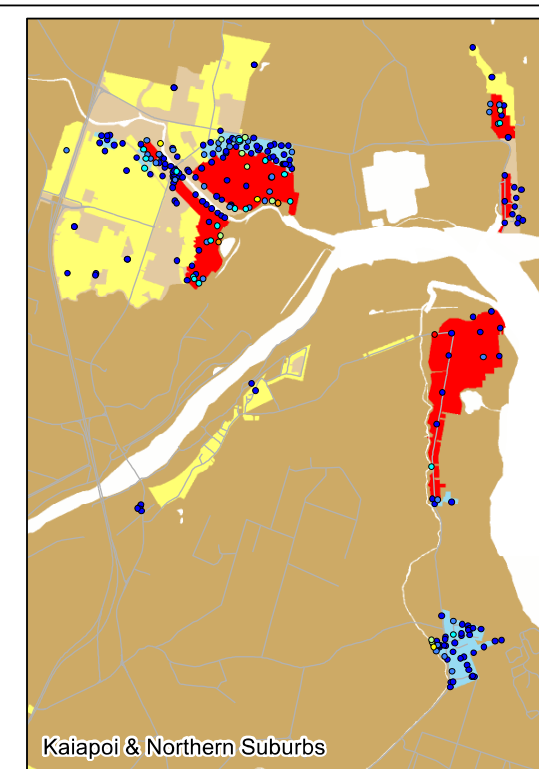
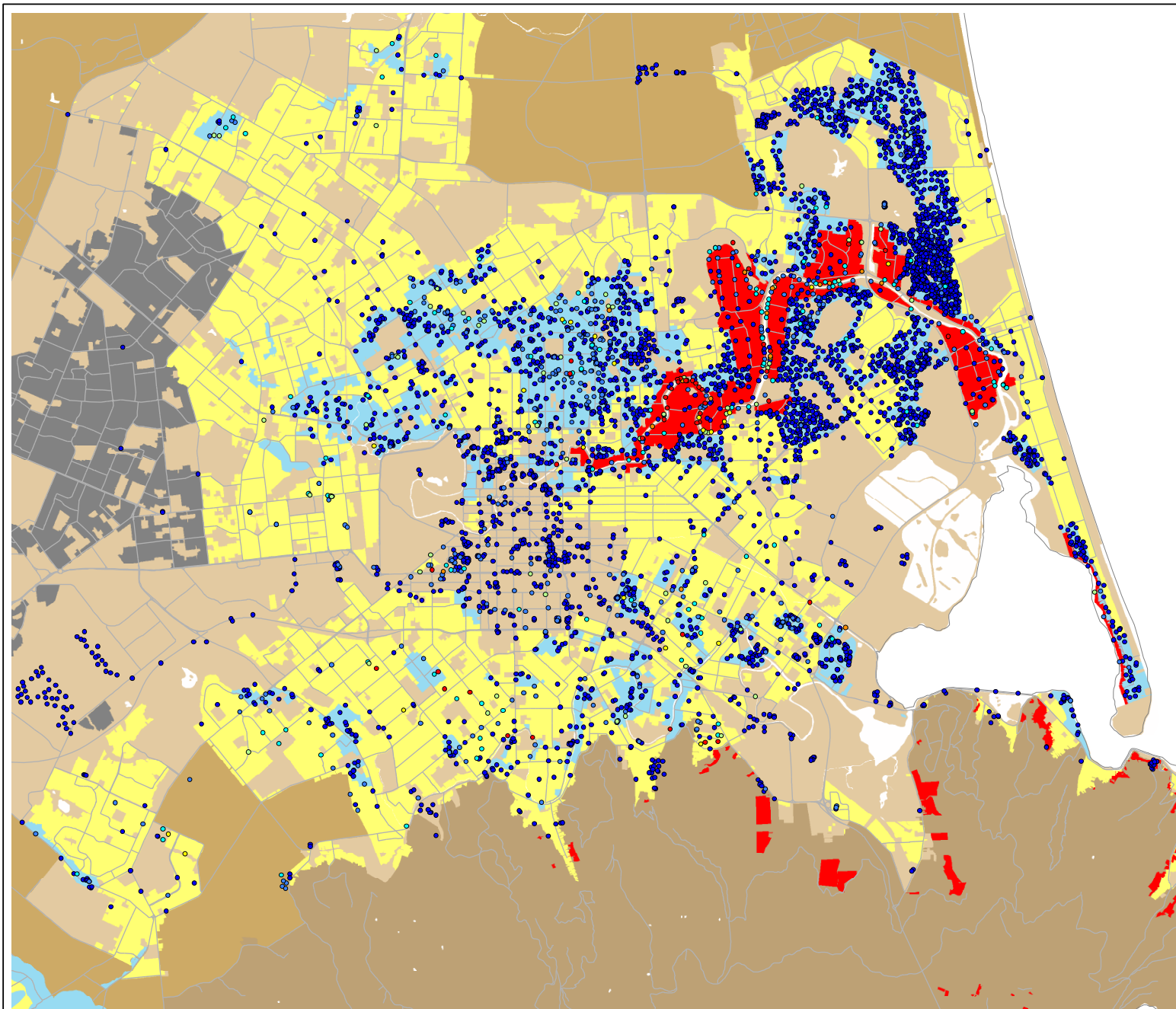
EQC
EARTHQUAKE COMMISSION
Kōhira Rūwhenua

DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE 52020-0200-LSN067		
SCALE (AT A3 SIZE) 1:60,000		
Prepared by Tonkin & Taylor Ltd. Ref: 52020.0200		

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
LSN based on the Median Groundwater Depth
(M7.5, PGA 0.08g)

FIGURE No. Figure I10

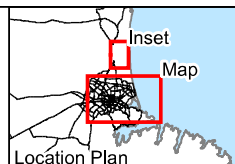
Rev. 0



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A3 SCALE 1:60,000

0 1 2 3 4 (km)

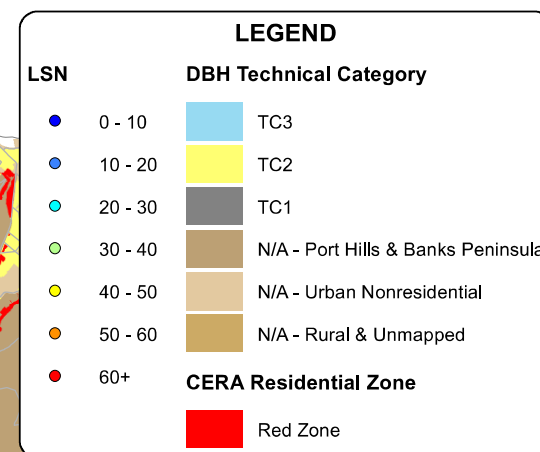
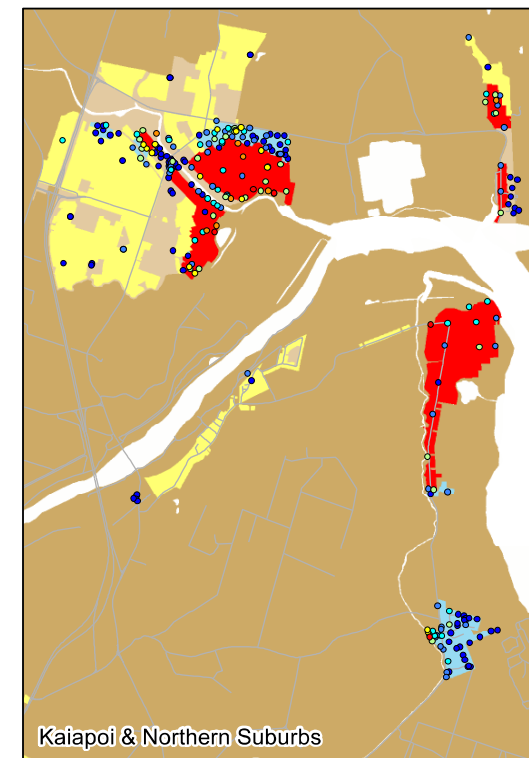
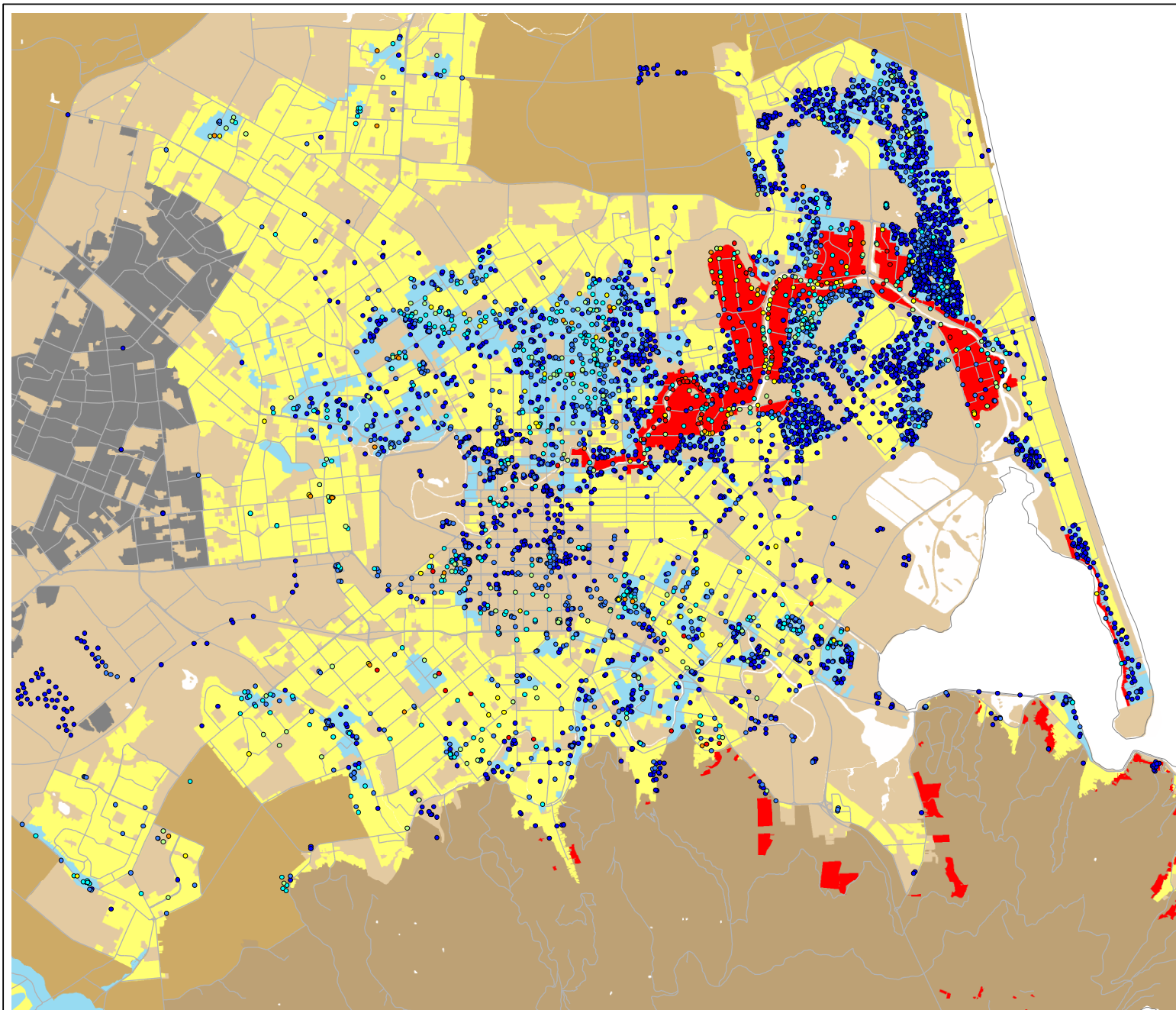


DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE	52020-0200-LSN068	
SCALE (AT A3 SIZE)	1:60,000	
Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M7.5, PGA 0.10g)

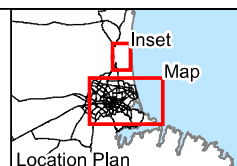
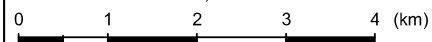
FIGURE No. Figure I11

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A3 SCALE 1:60,000



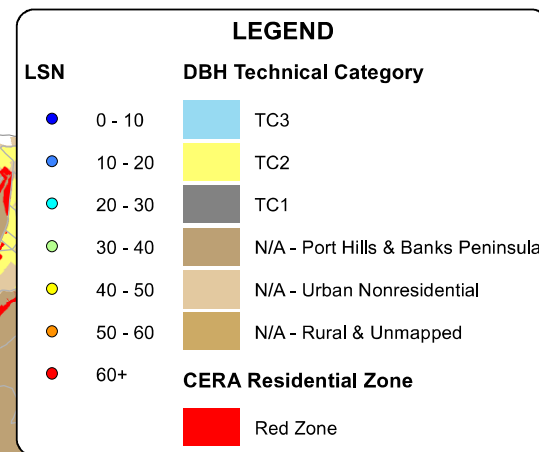
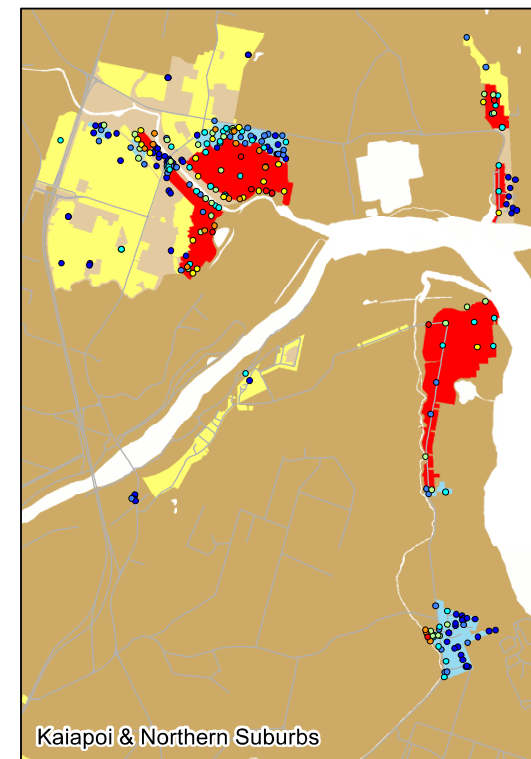
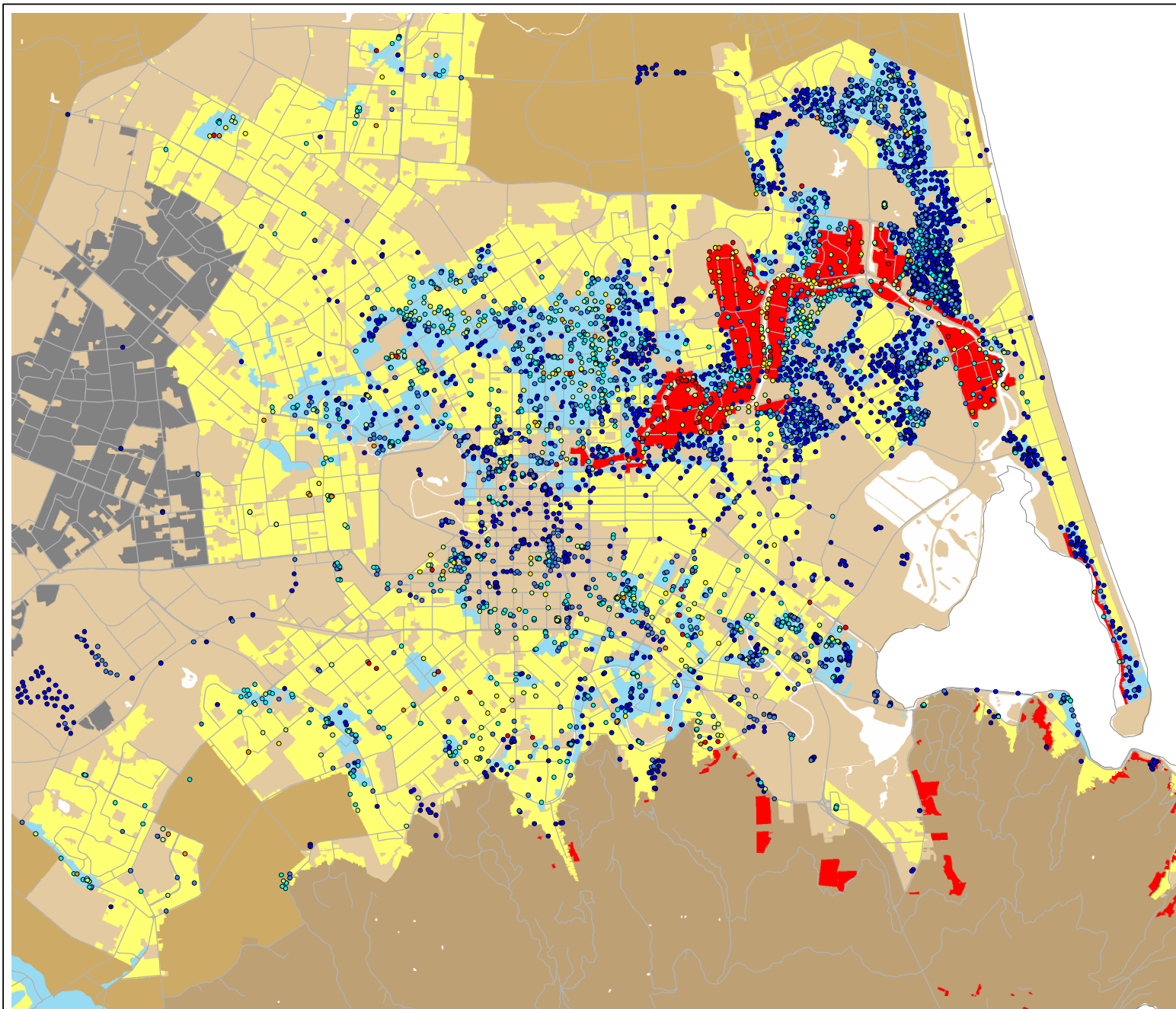
EQC
EARTHQUAKE COMMISSION
Kōmihana Rūwhenua

DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE 52020-0200-LSN069		
SCALE (AT A3 SIZE) 1:60,000		
Prepared by Tonkin & Taylor Ltd. Ref: 52020.0200		

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
LSN based on the Median Groundwater Depth
(M7.5, PGA 0.13g)

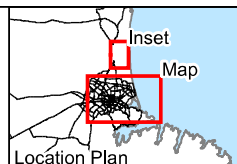
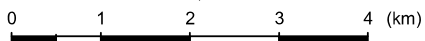
FIGURE No. Figure I12

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A3 SCALE 1:60,000



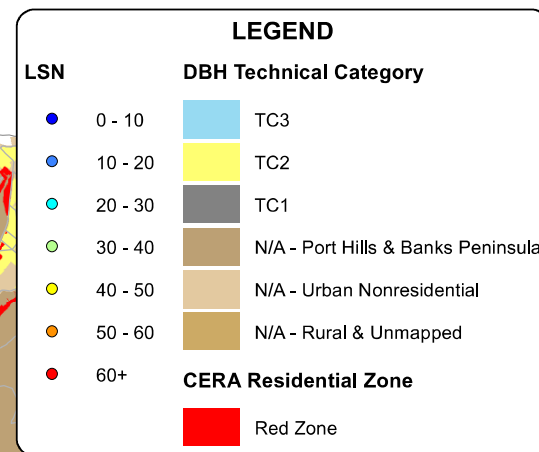
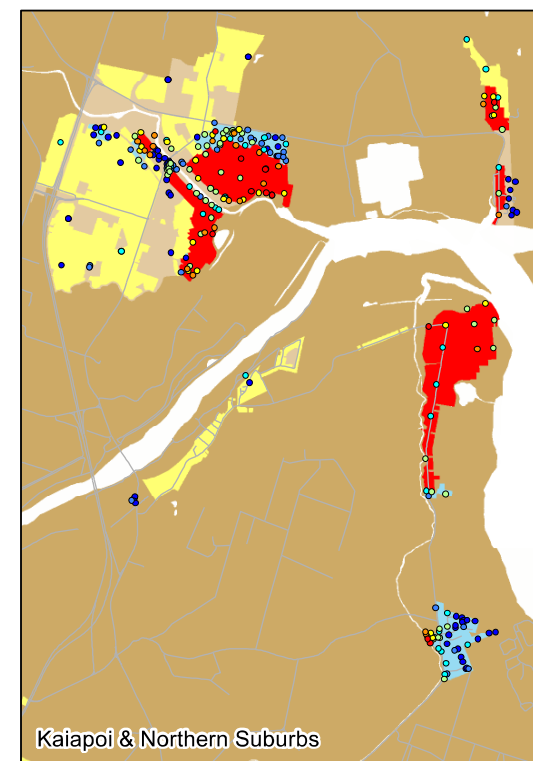
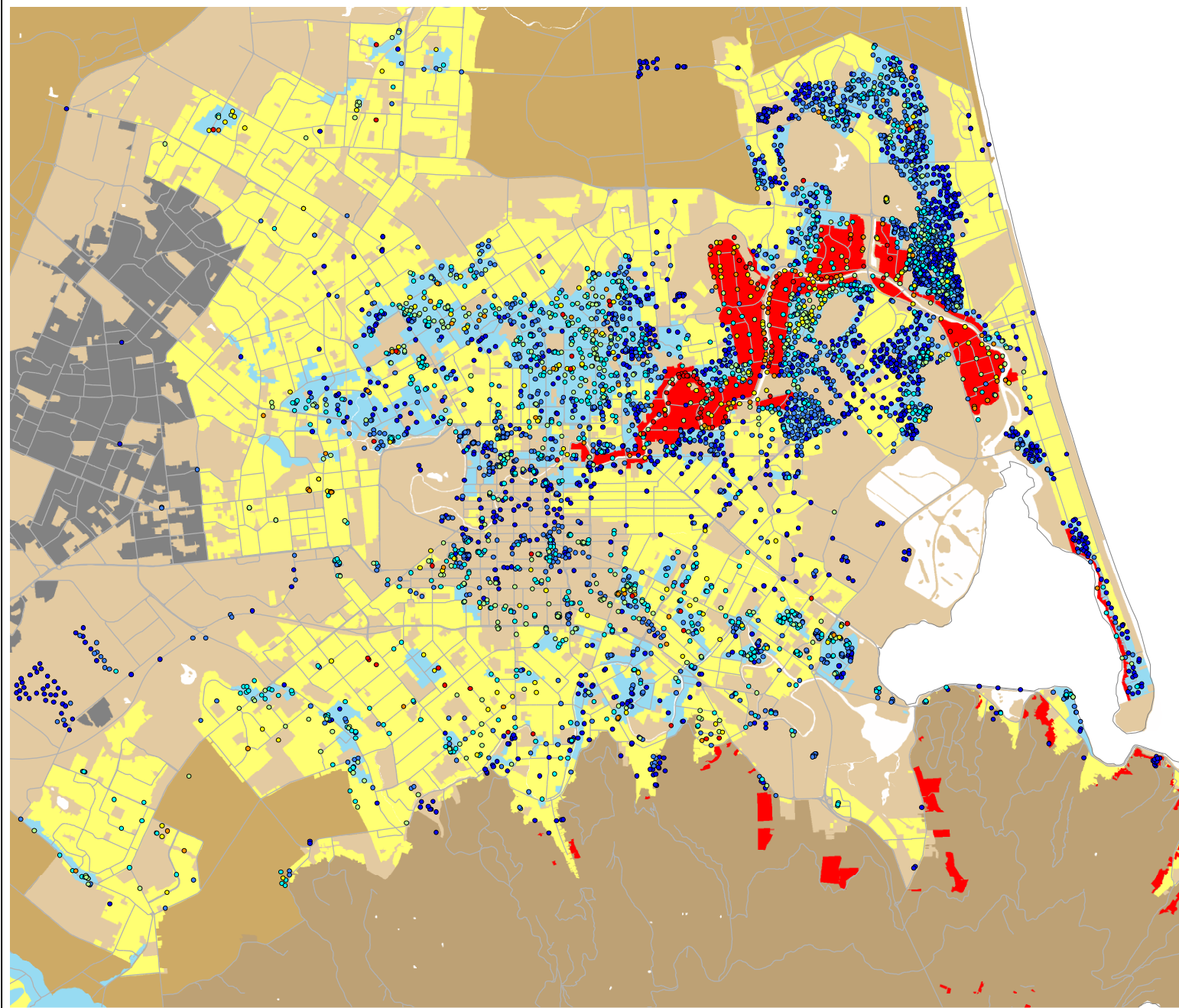
EQC
EARTHQUAKE COMMISSION
Kōmihana Rūwhenua

DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE 52020-0200-LSN070		
SCALE (AT A3 SIZE) 1:60,000		
Prepared by Tonkin & Taylor Ltd. Ref: 52020.0200		

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
LSN based on the Median Groundwater Depth
(M7.5, PGA 0.15g)

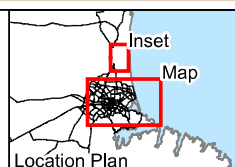
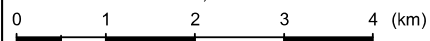
FIGURE No. Figure I13

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A3 SCALE 1:60,000

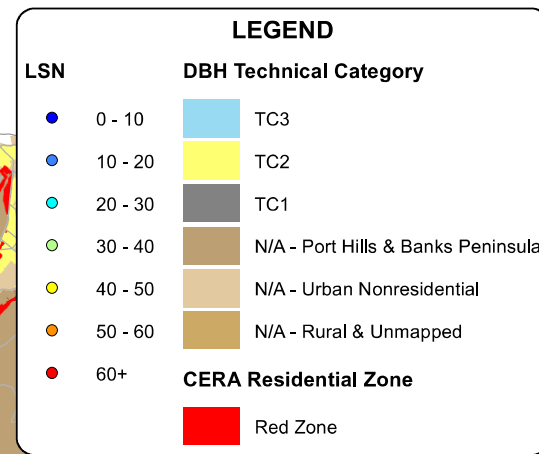
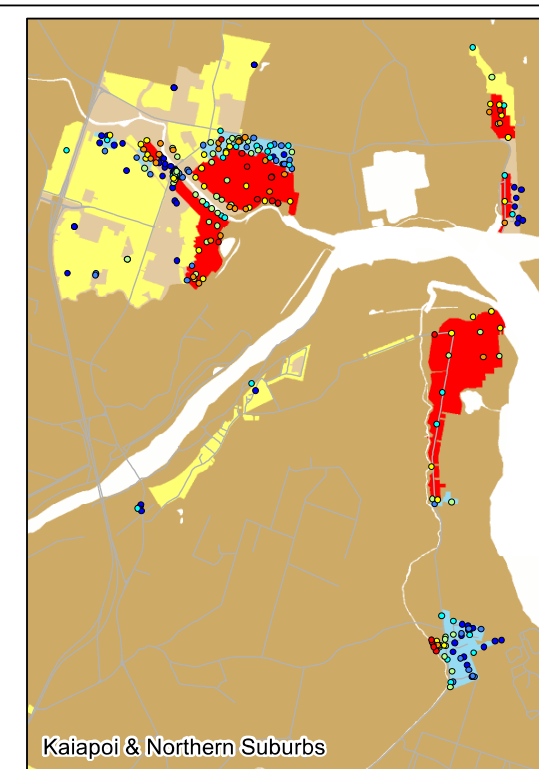
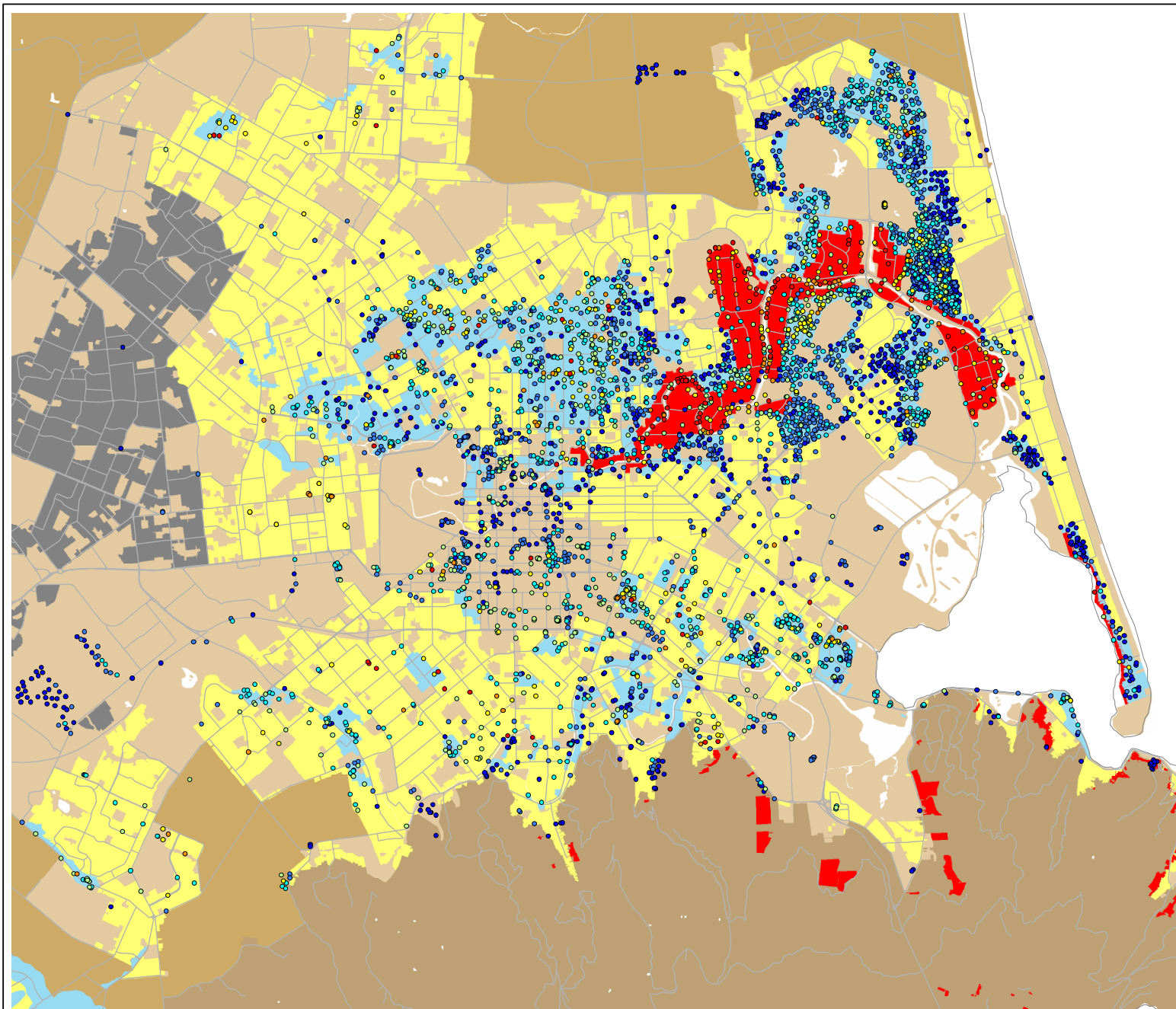


DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE	52020-0200-LSN071	
SCALE (AT A3 SIZE)	1:60,000	
Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M7.5, PGA 0.18g)

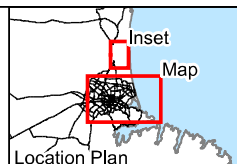
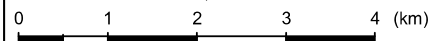
FIGURE No. Figure I14

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A3 SCALE 1:60,000

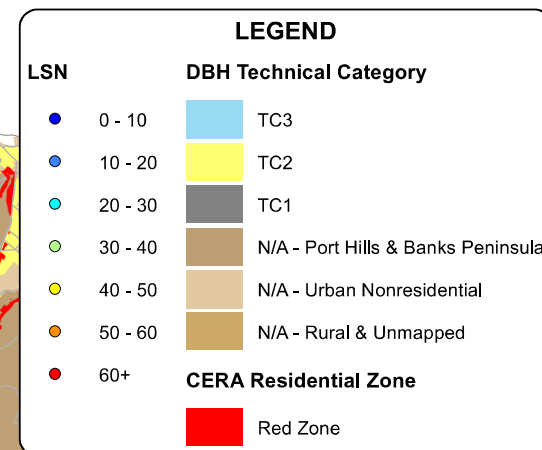
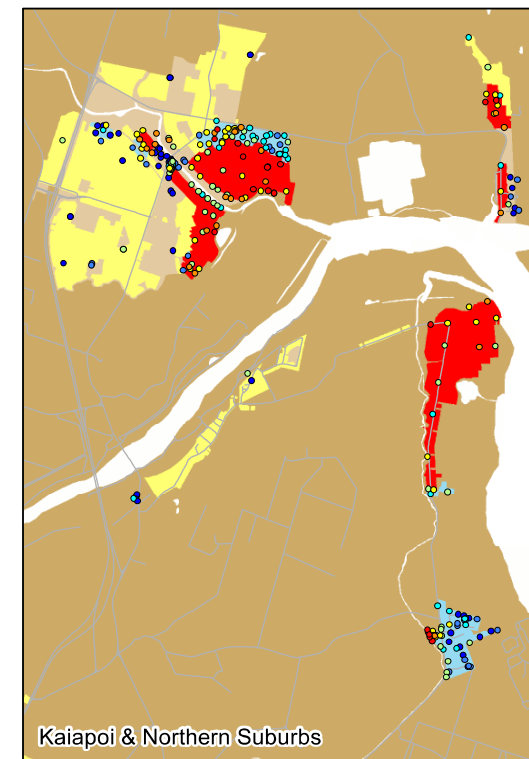
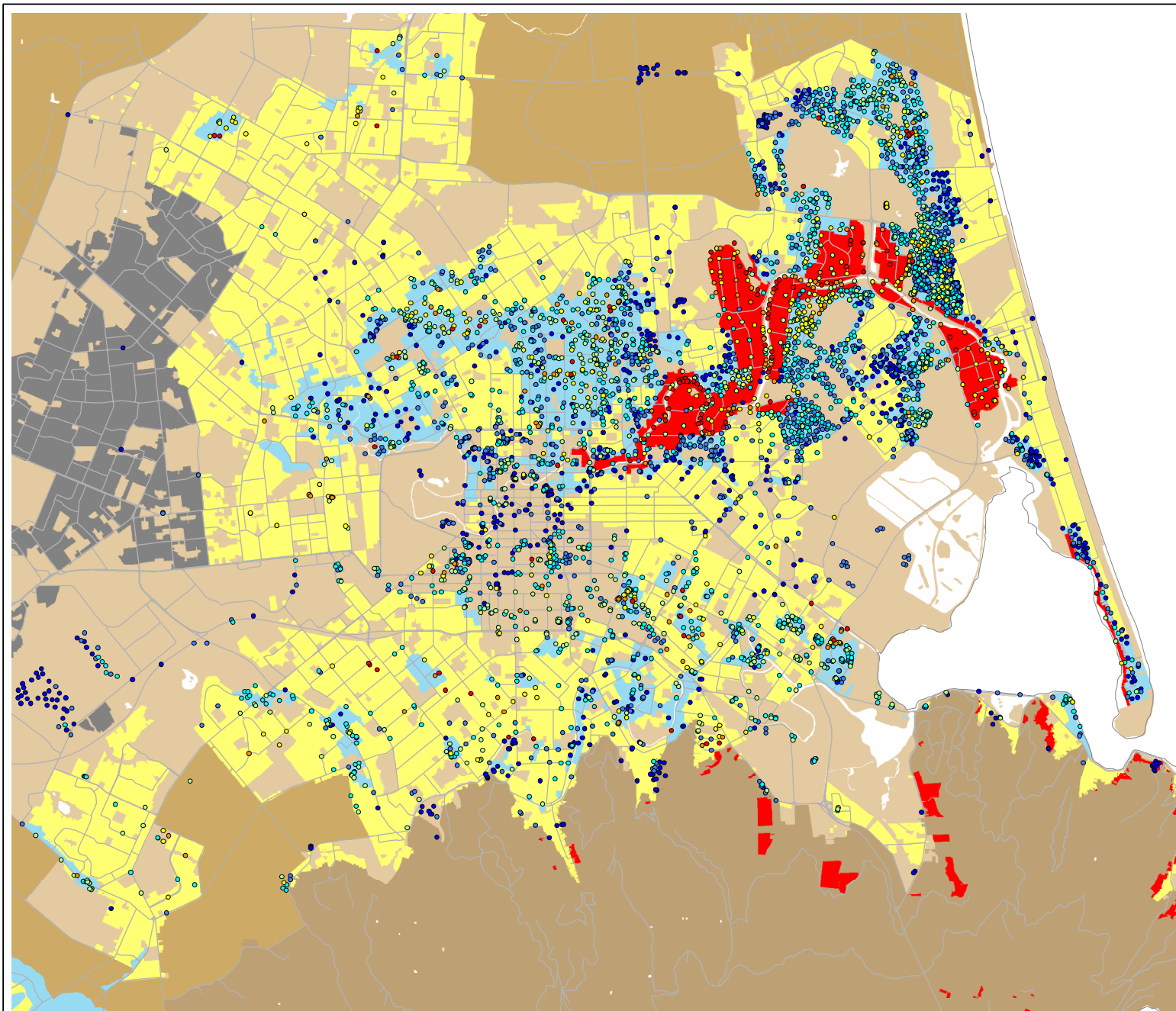


DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE	52020-0200-LSN072	
SCALE (AT A3 SIZE)	1:60,000	
Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M7.5, PGA 0.22g)

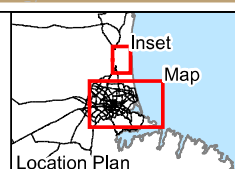
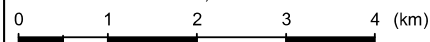
FIGURE No. Figure I15

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A3 SCALE 1:60,000

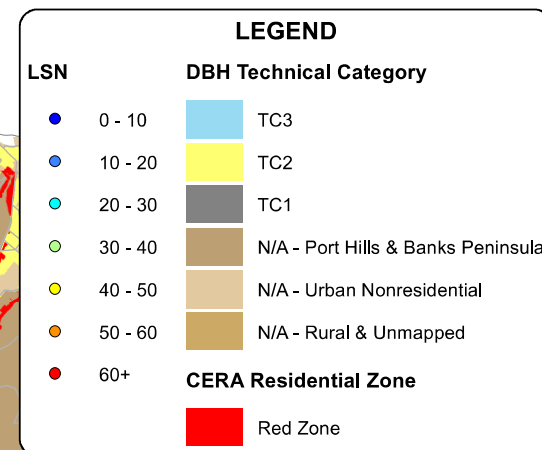
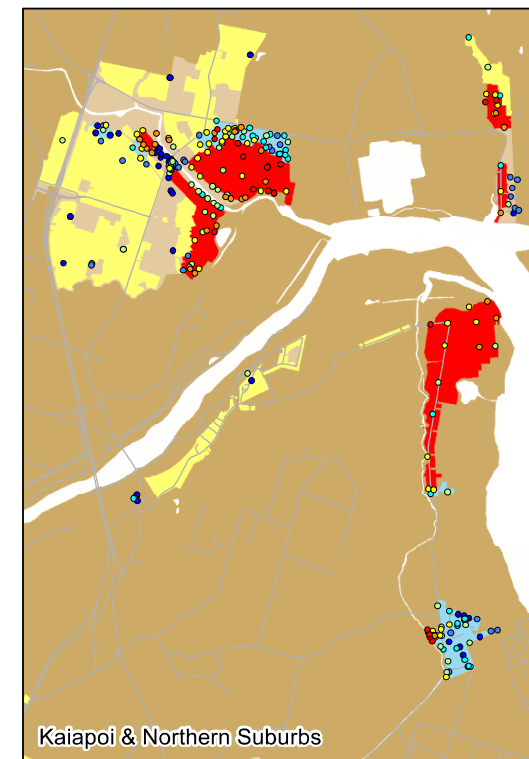
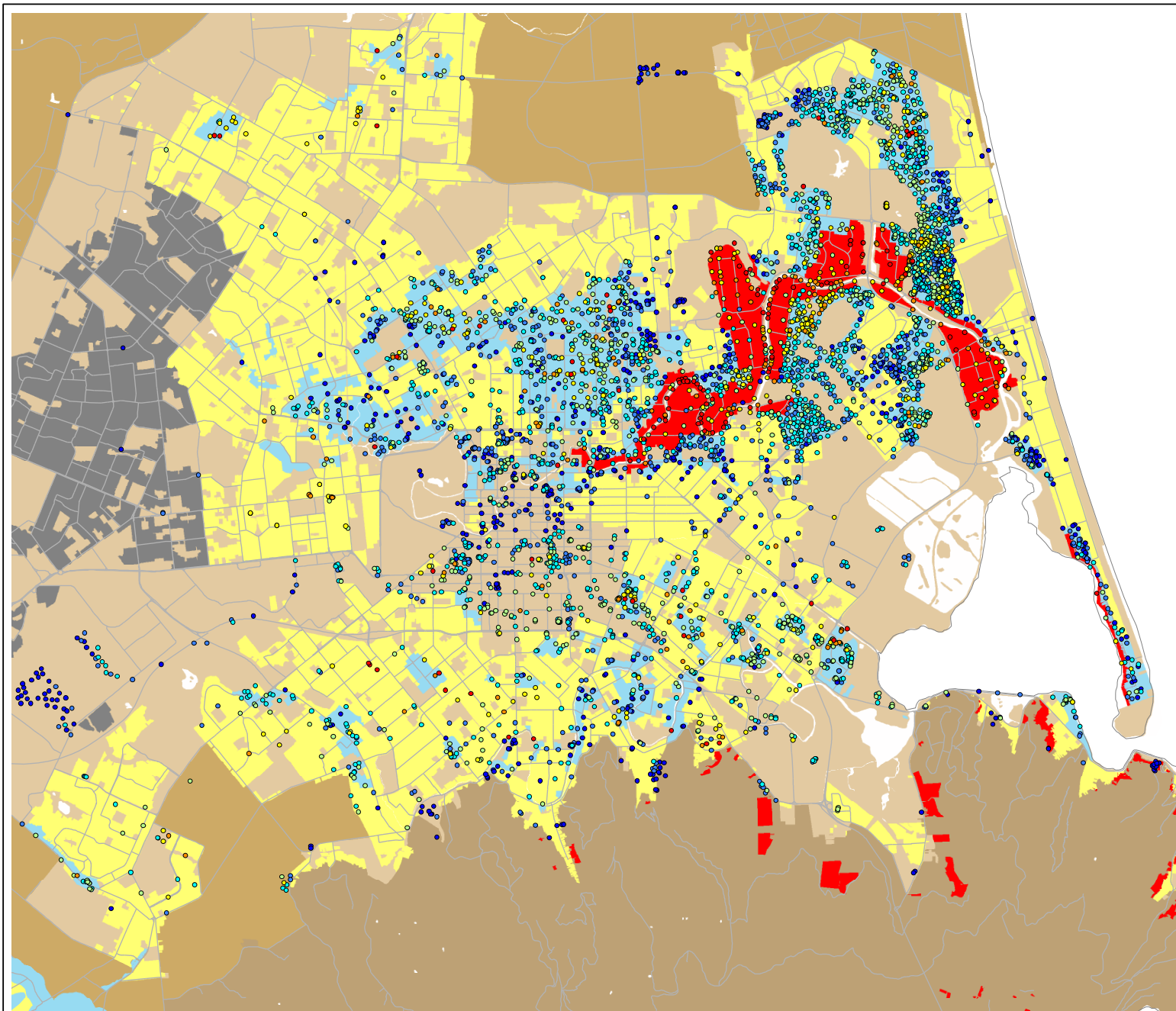


DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE	52020-0200-LSN073	
SCALE (AT A3 SIZE)	1:60,000	
Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M7.5, PGA 0.27g)

FIGURE No. Figure I16

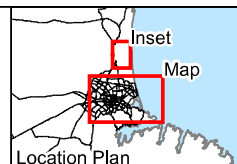
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A3 SCALE 1:60,000

0 1 2 3 4 (km)

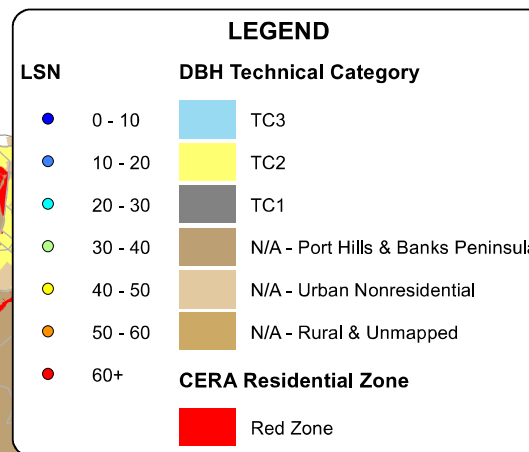
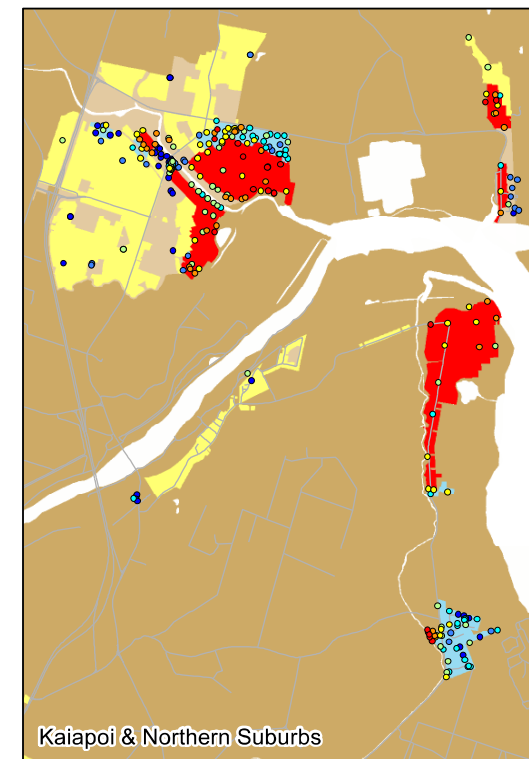
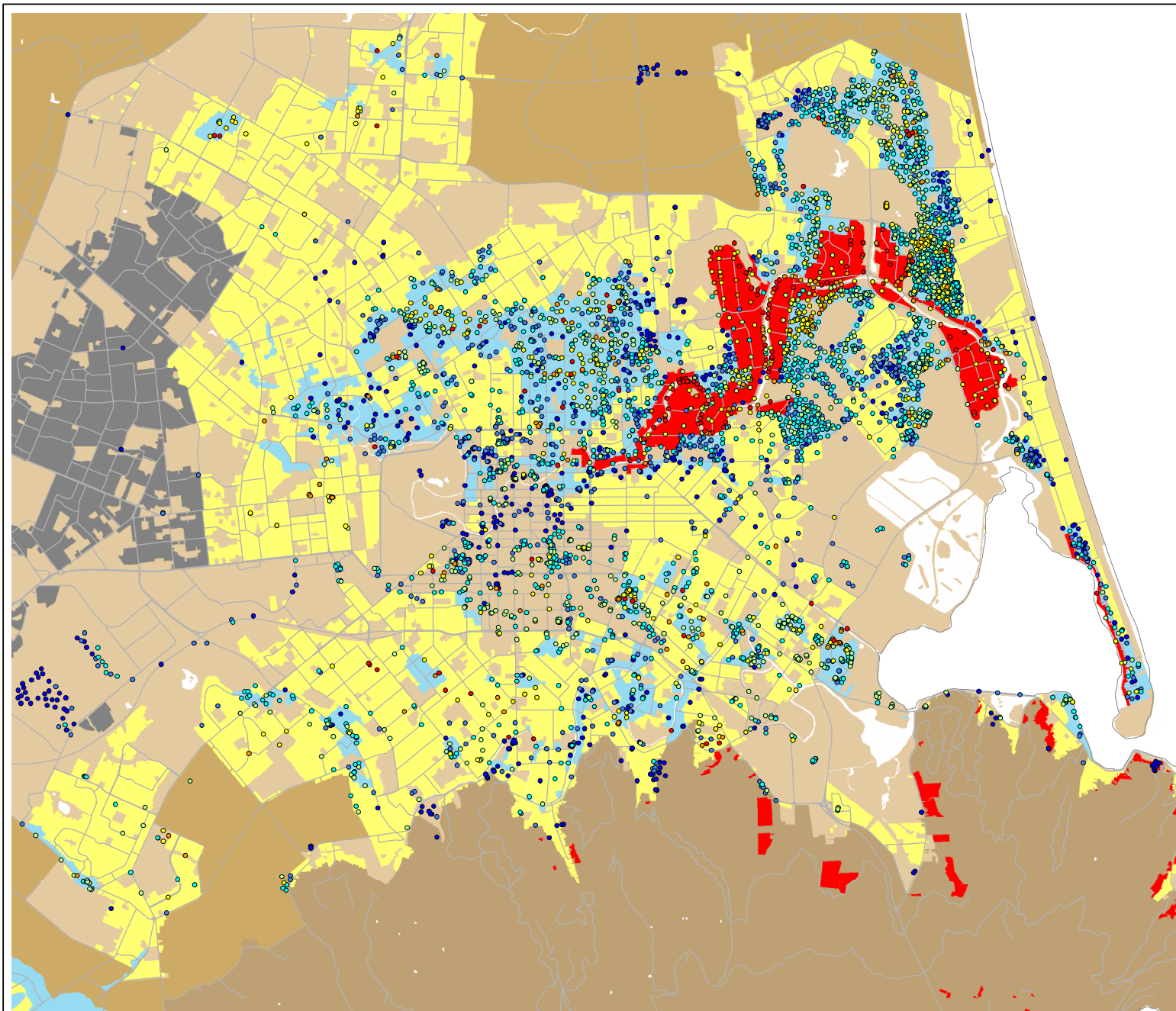


DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE	52020-0200-LSN074	
SCALE (AT A3 SIZE)	1:60,000	
Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M7.5, PGA 0.35g)

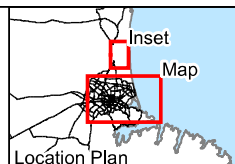
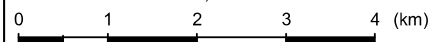
FIGURE No. Figure I17

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A3 SCALE 1:60,000



DRAWN	CXP	Feb.13
CHECKED		
APPROVED		
ARCFILE	52020-0200-LSN075	
SCALE (AT A3 SIZE)	1:60,000	
Prepared by	Tonkin & Taylor Ltd.	
Ref:	52020.0200	

EARTHQUAKE COMMISSION
CHRISTCHURCH CITY & KAIAPOI
 LSN based on the Median Groundwater Depth
 (M7.5, PGA 0.40g)

FIGURE No. Figure I18

Rev. 0