EXHIBIT STATEMENT OF EVIDENCE OF KATHLEEN THIEL-LARDON

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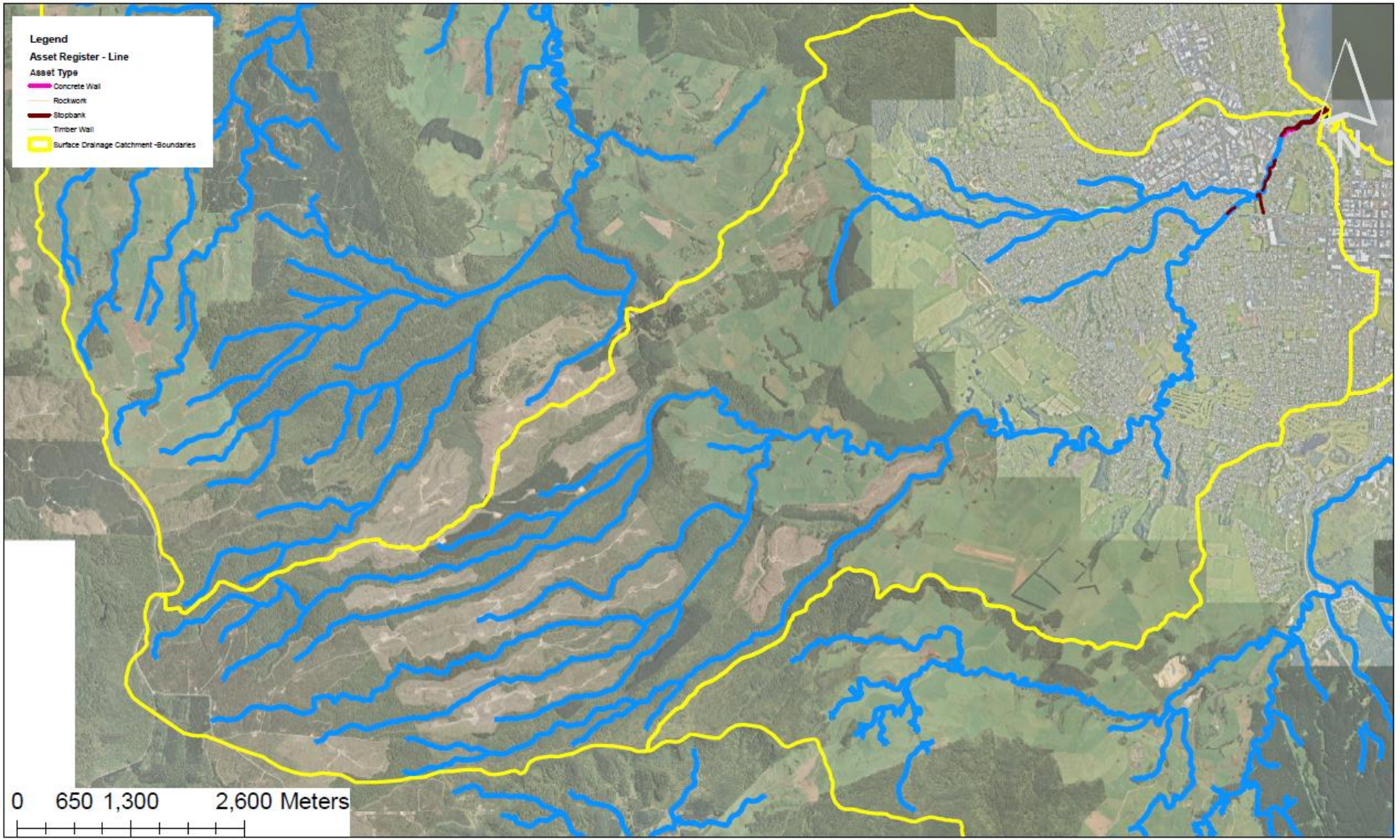

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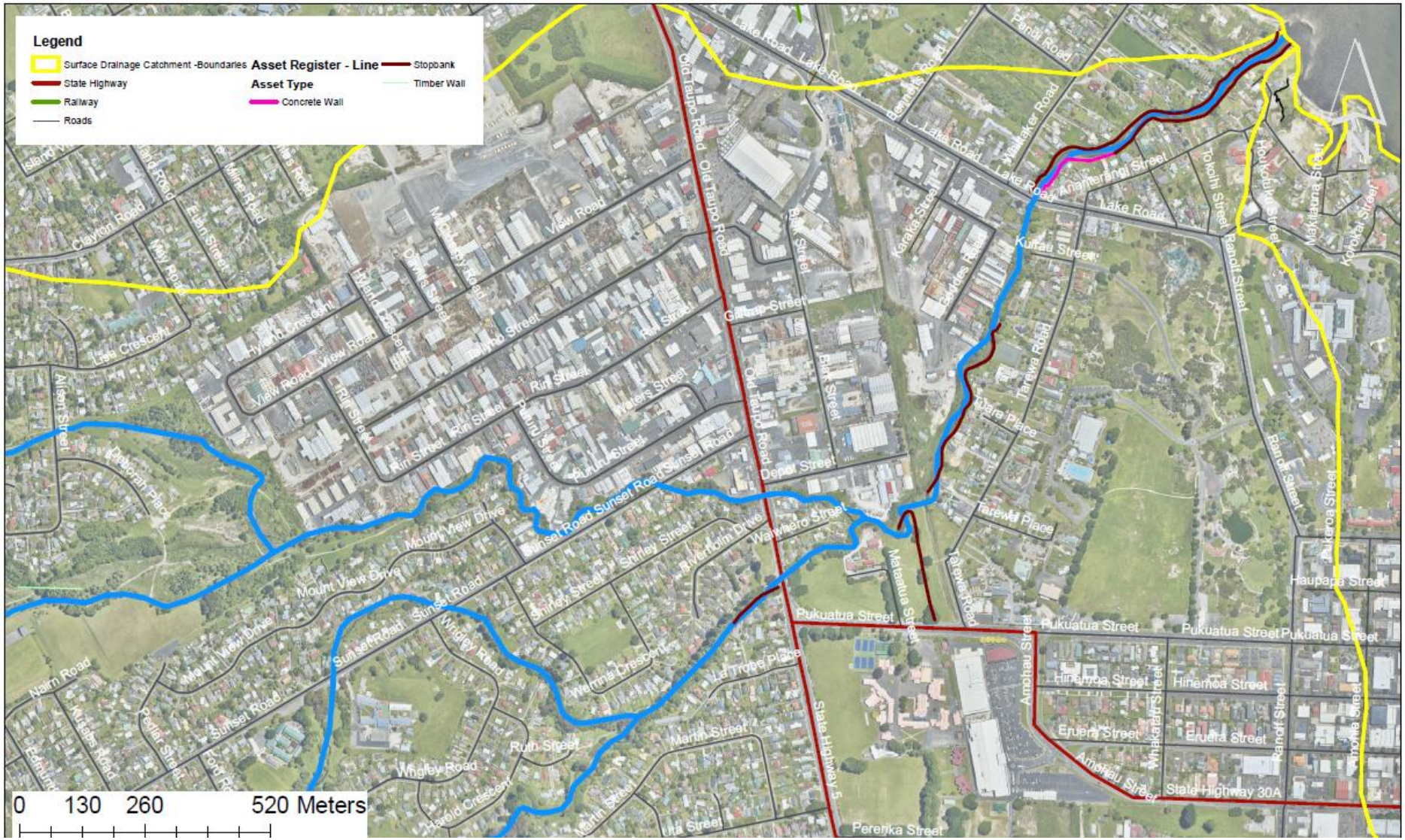

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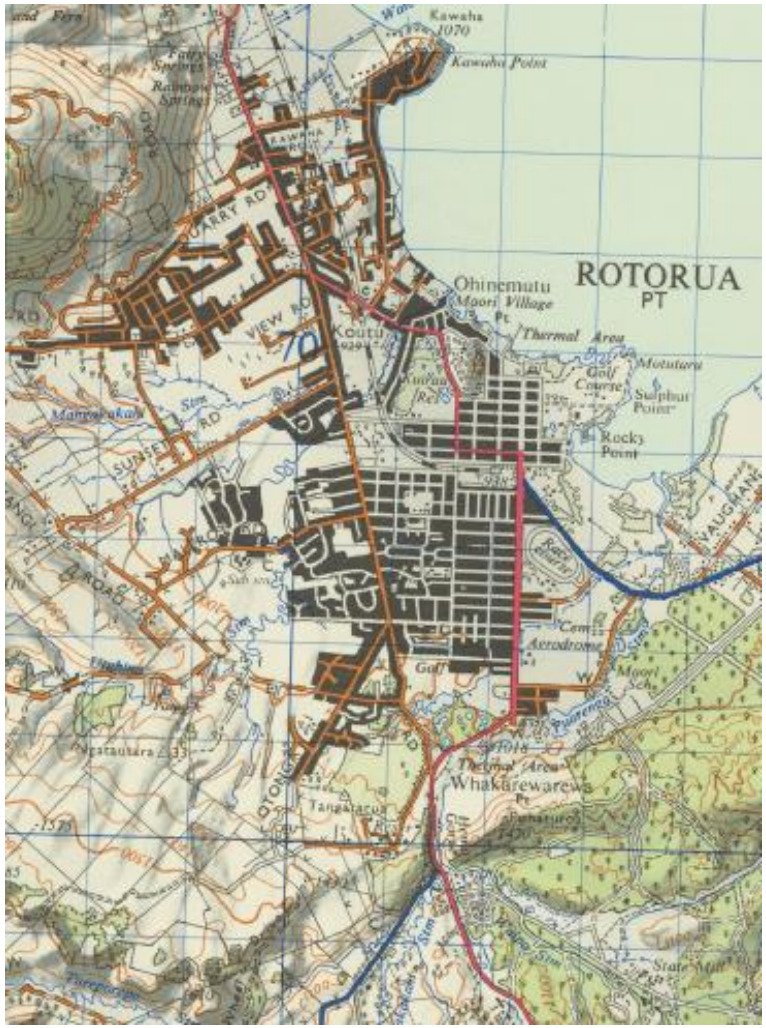

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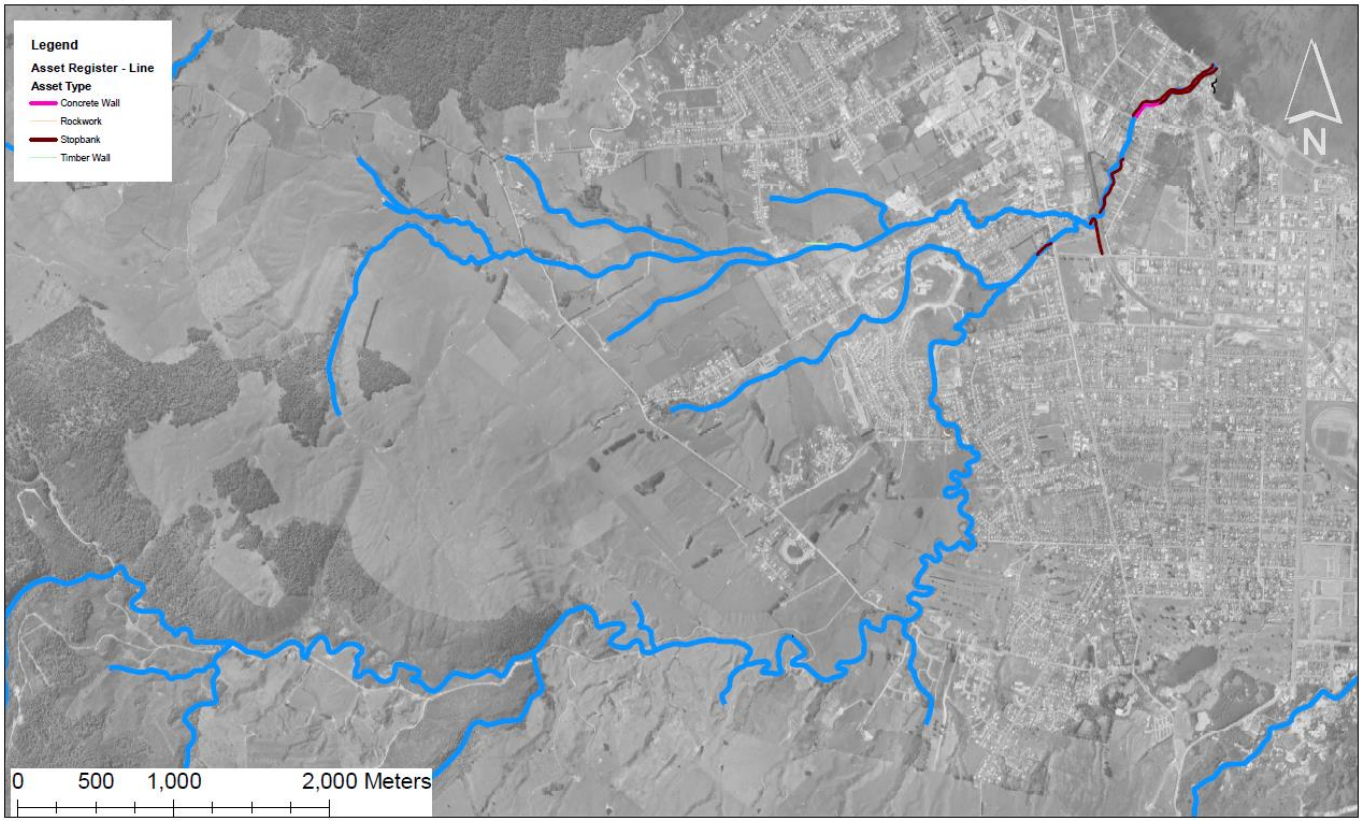

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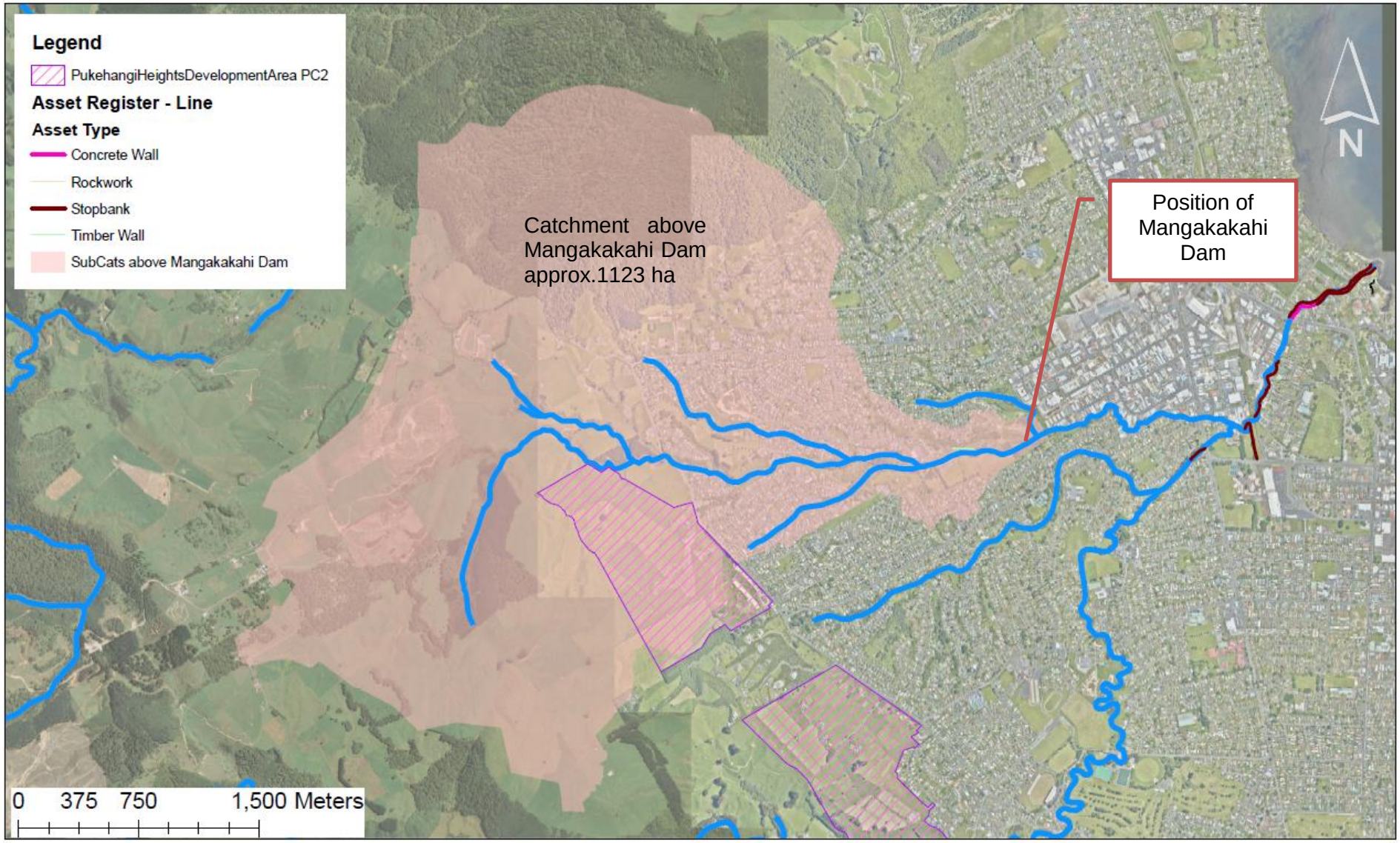

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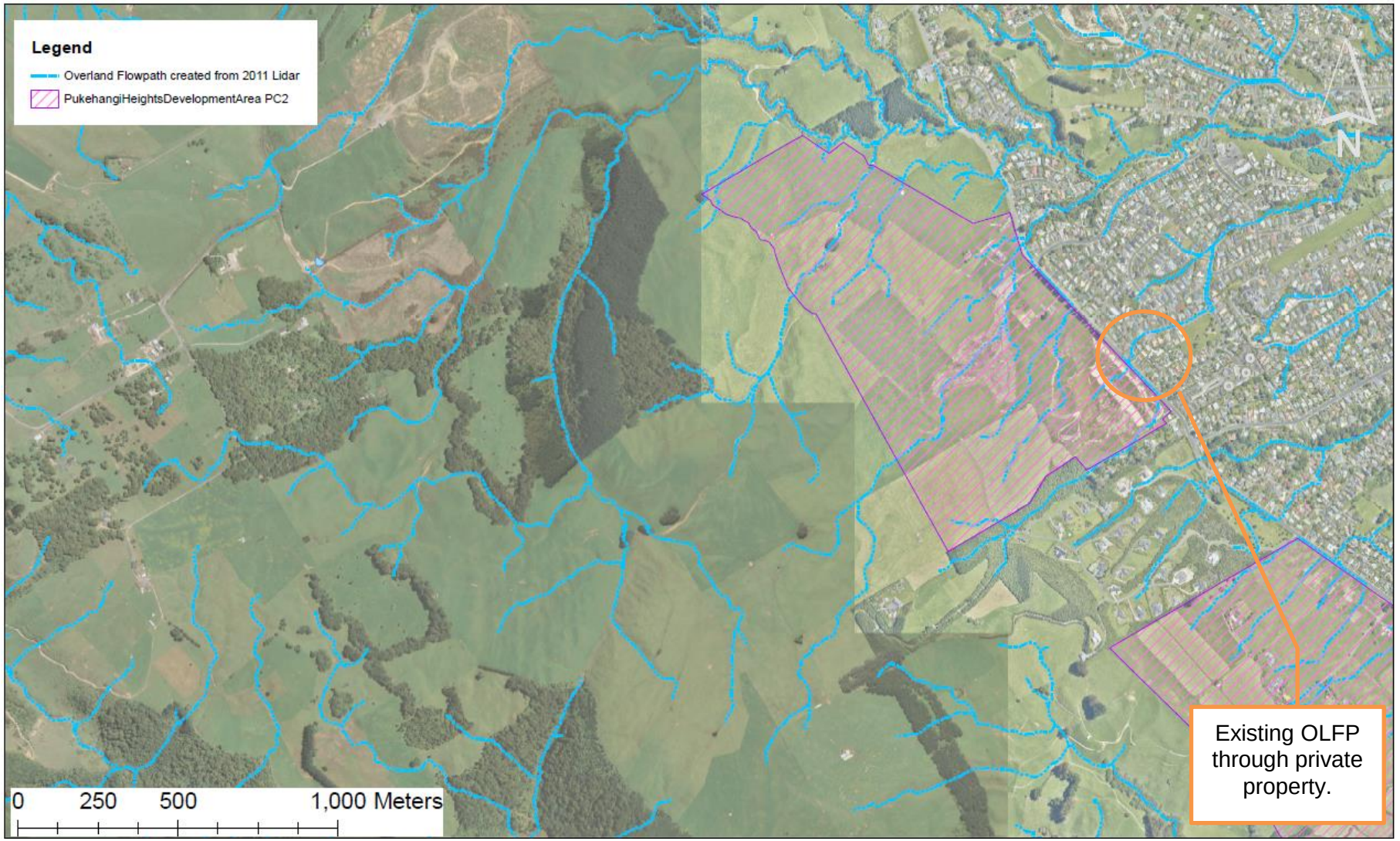
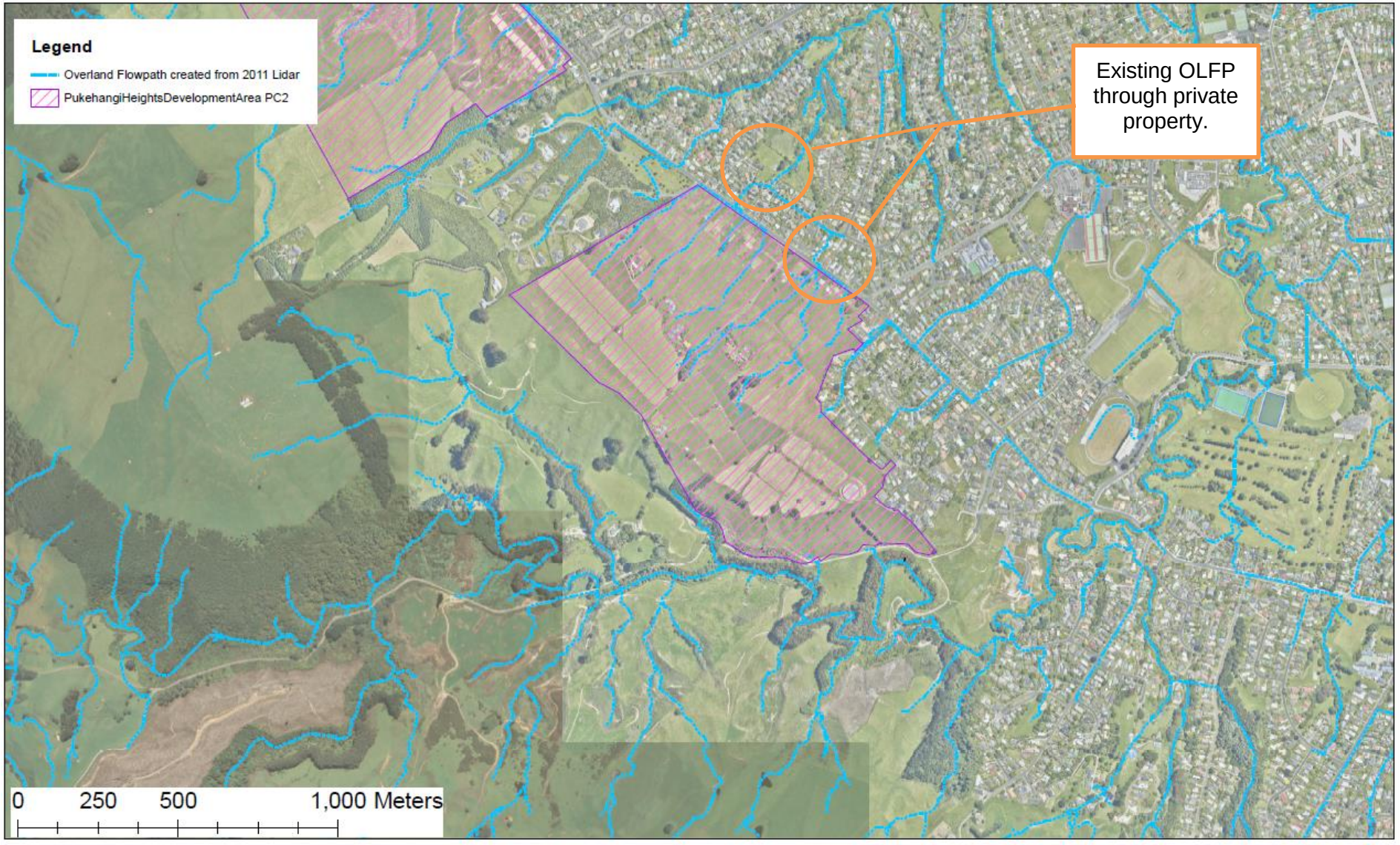


Figure 9: Pukehangi Plan Change Area – Overland flow path (OLFP) West



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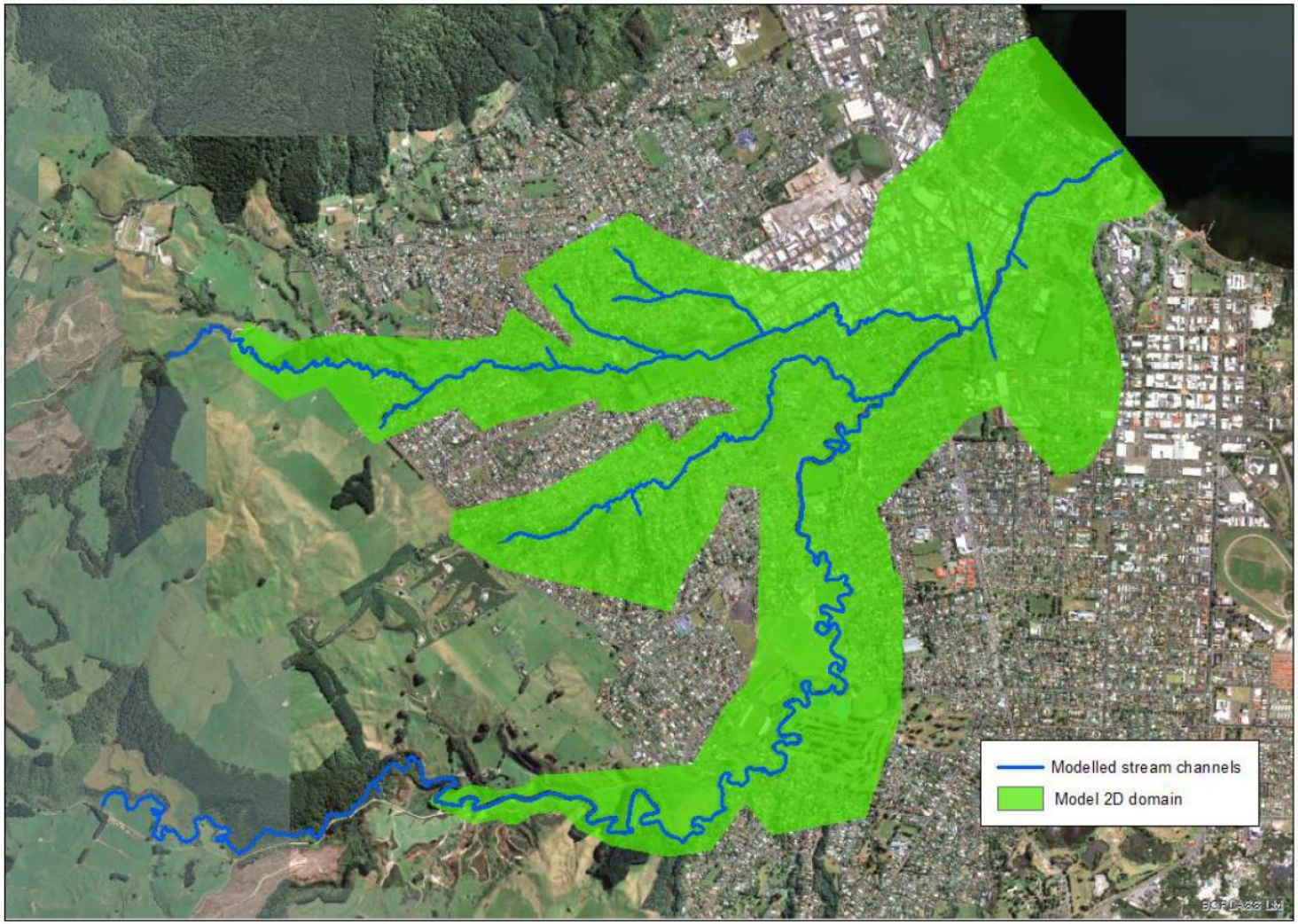

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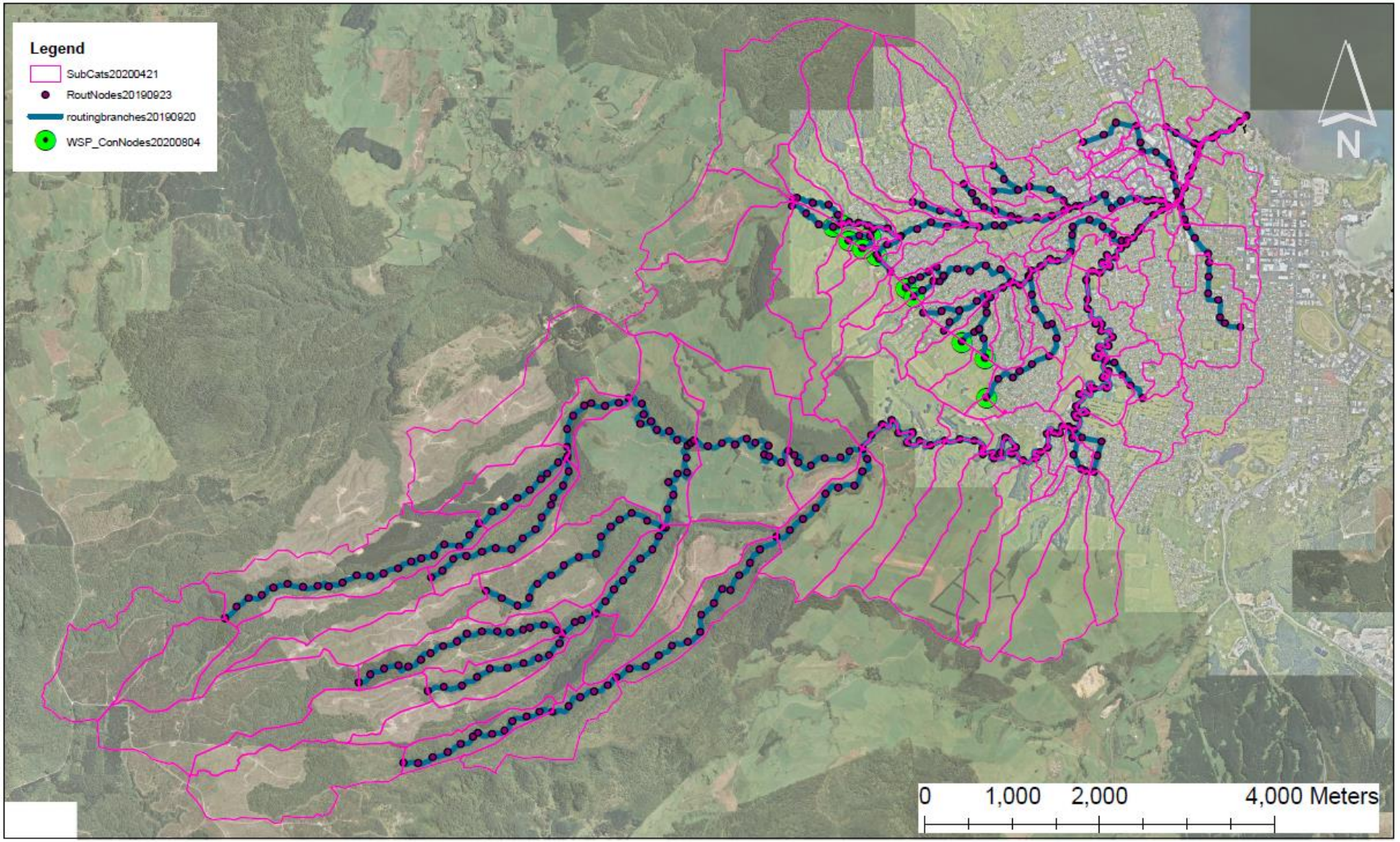

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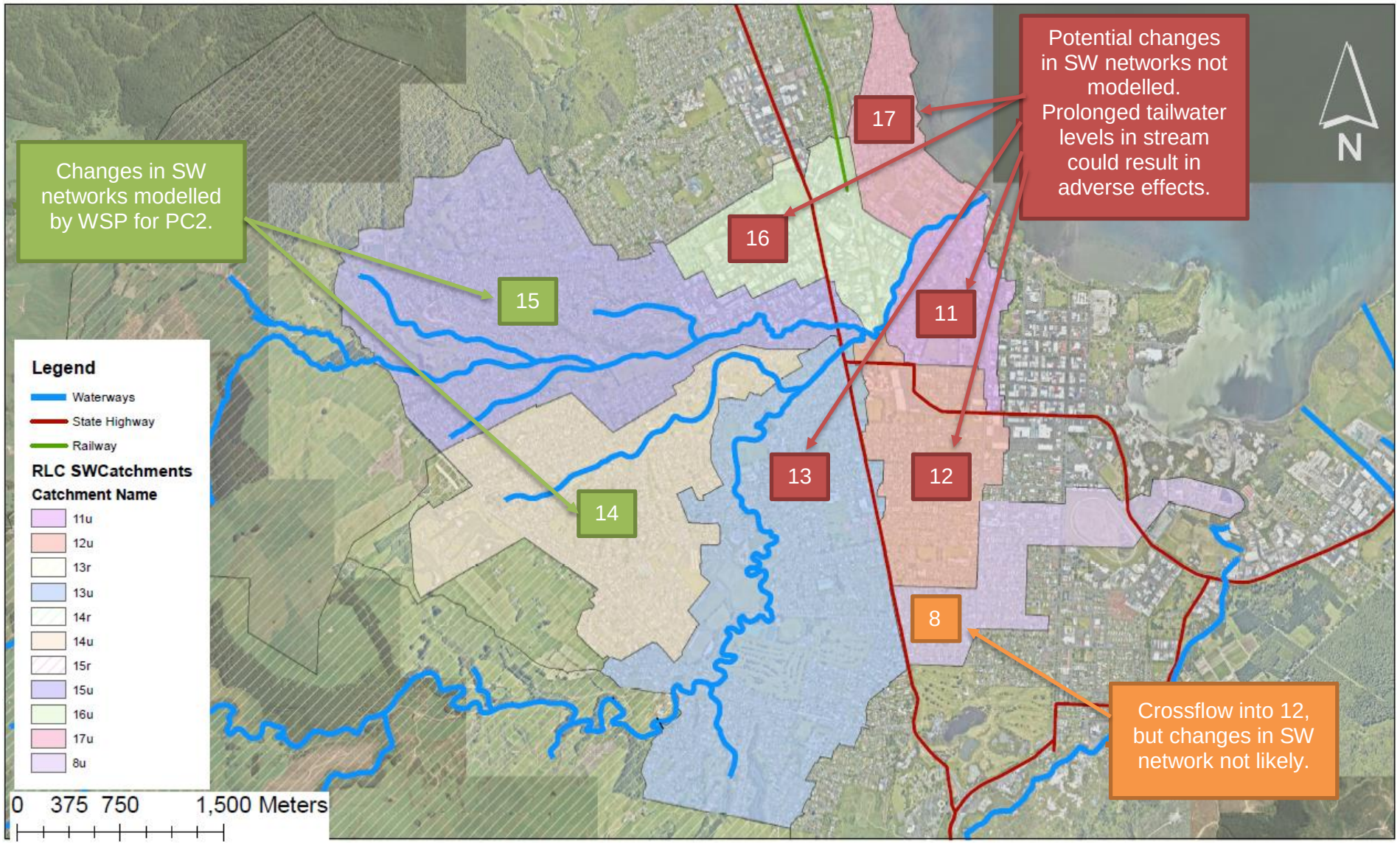

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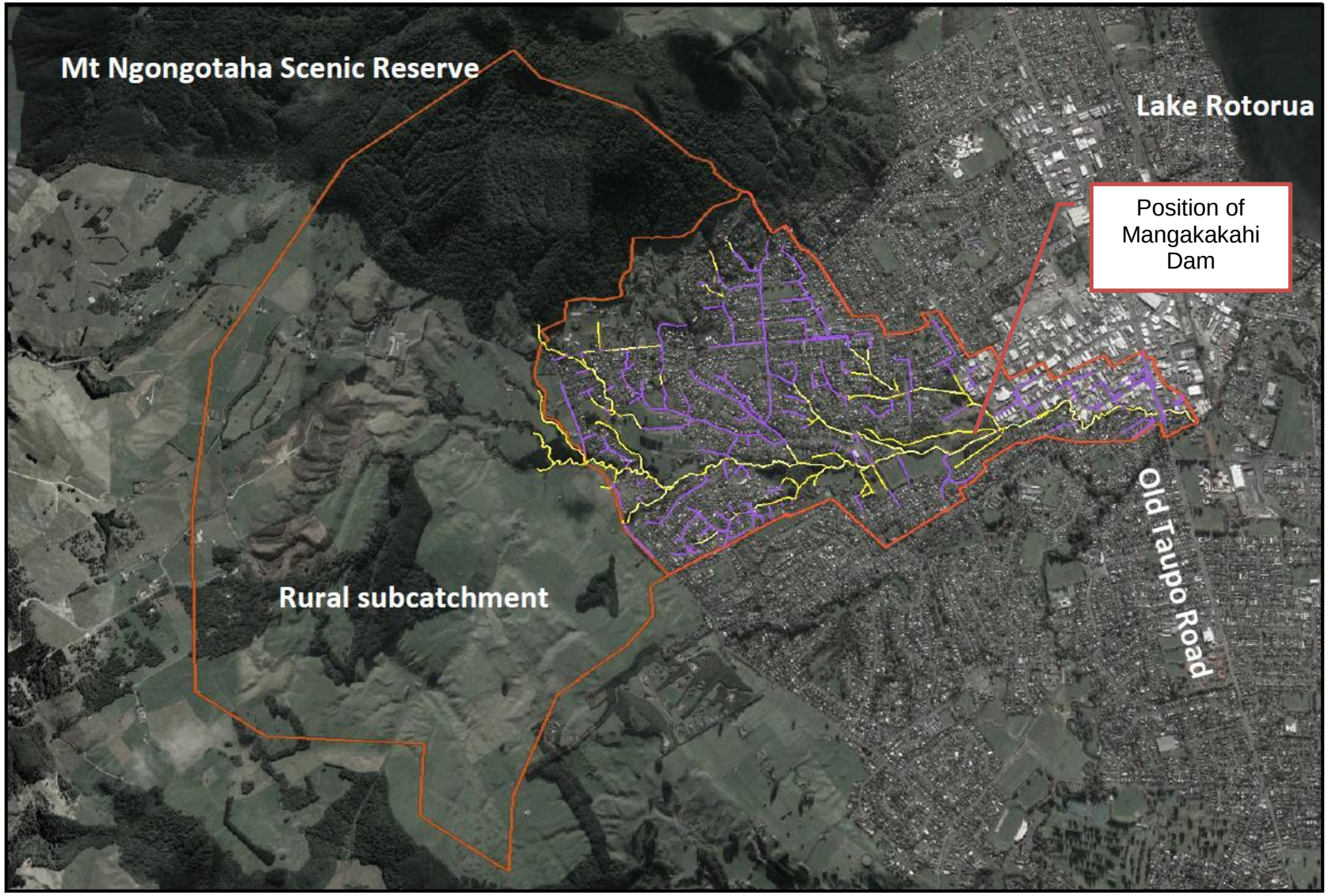

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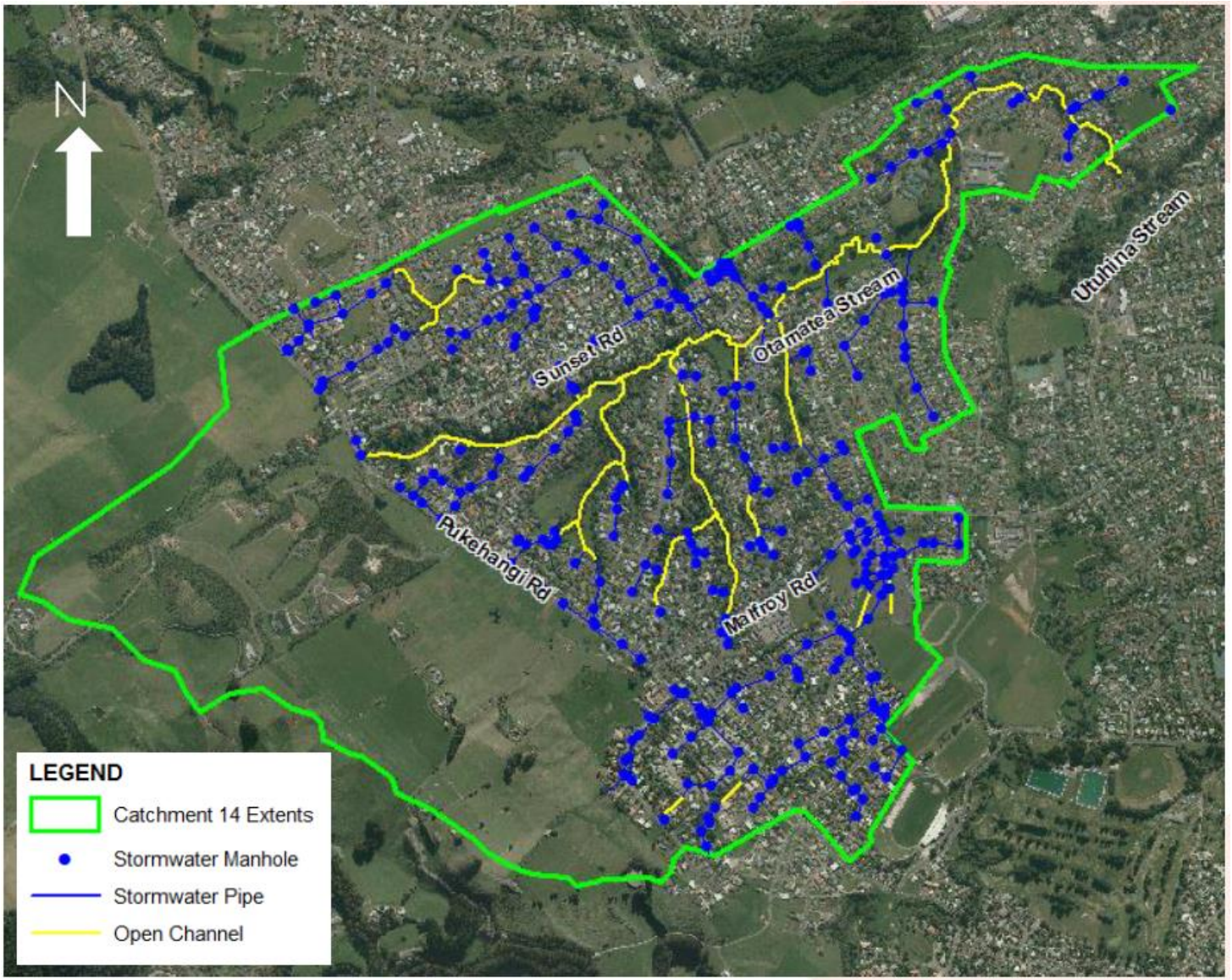

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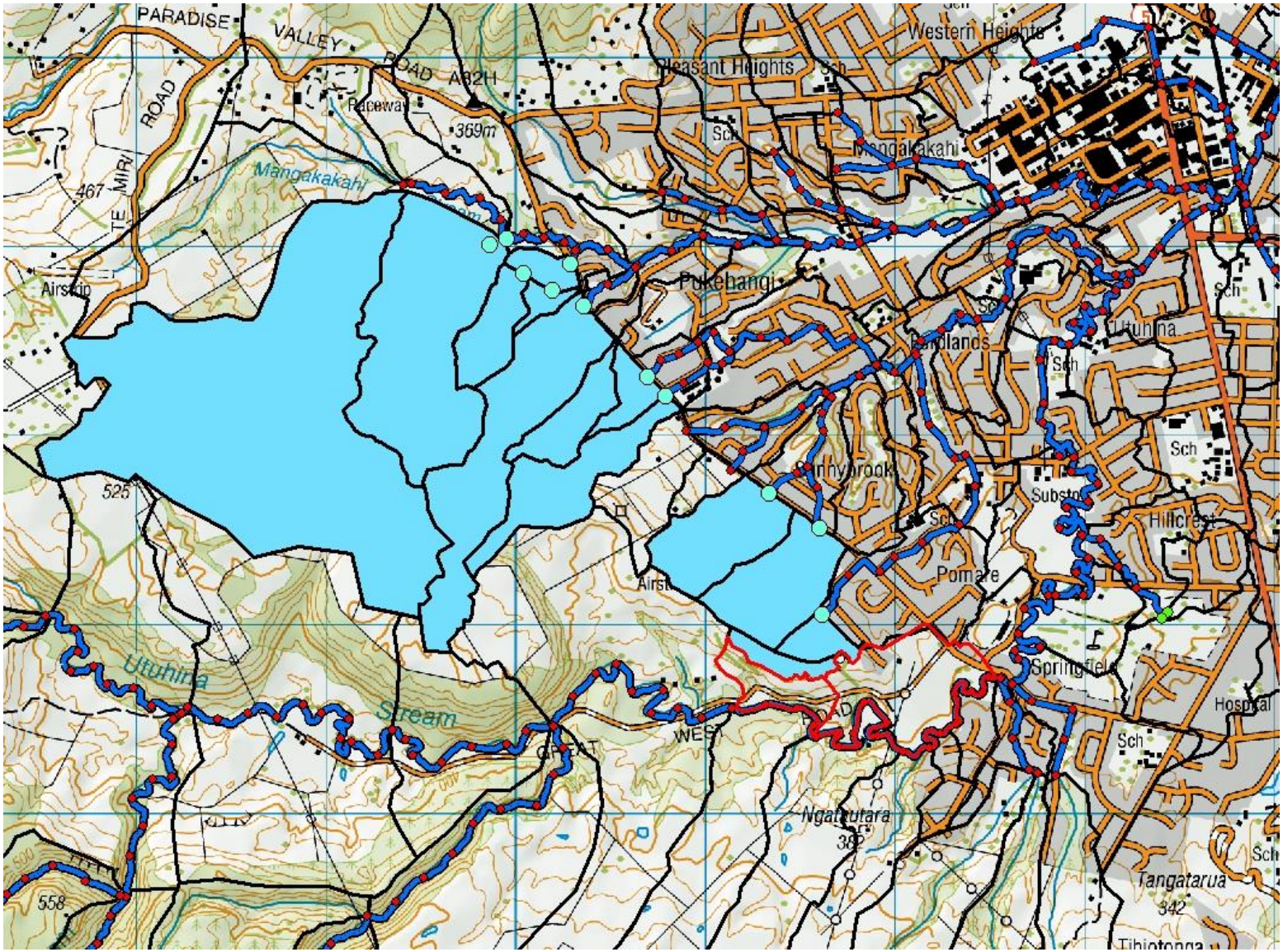

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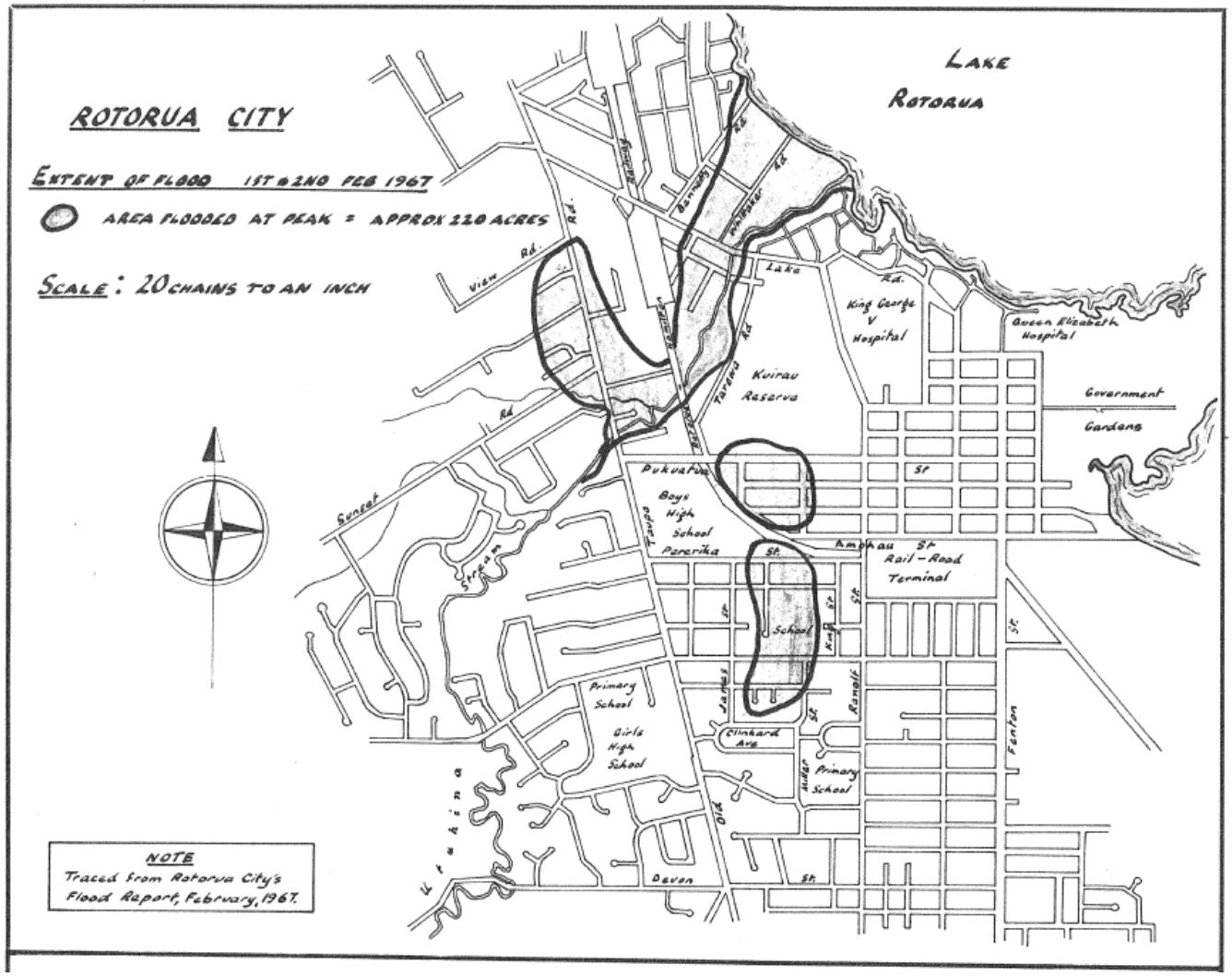

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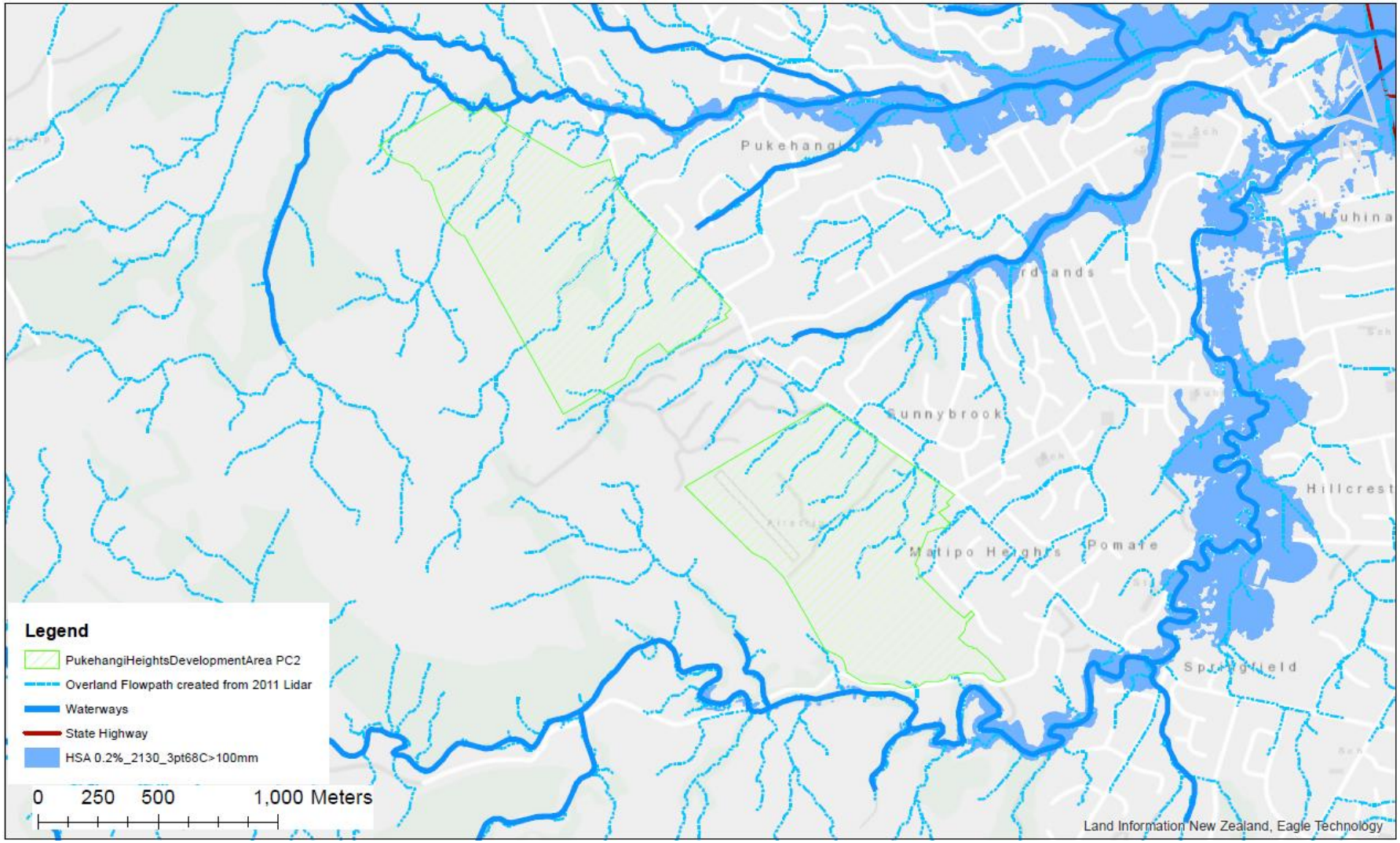

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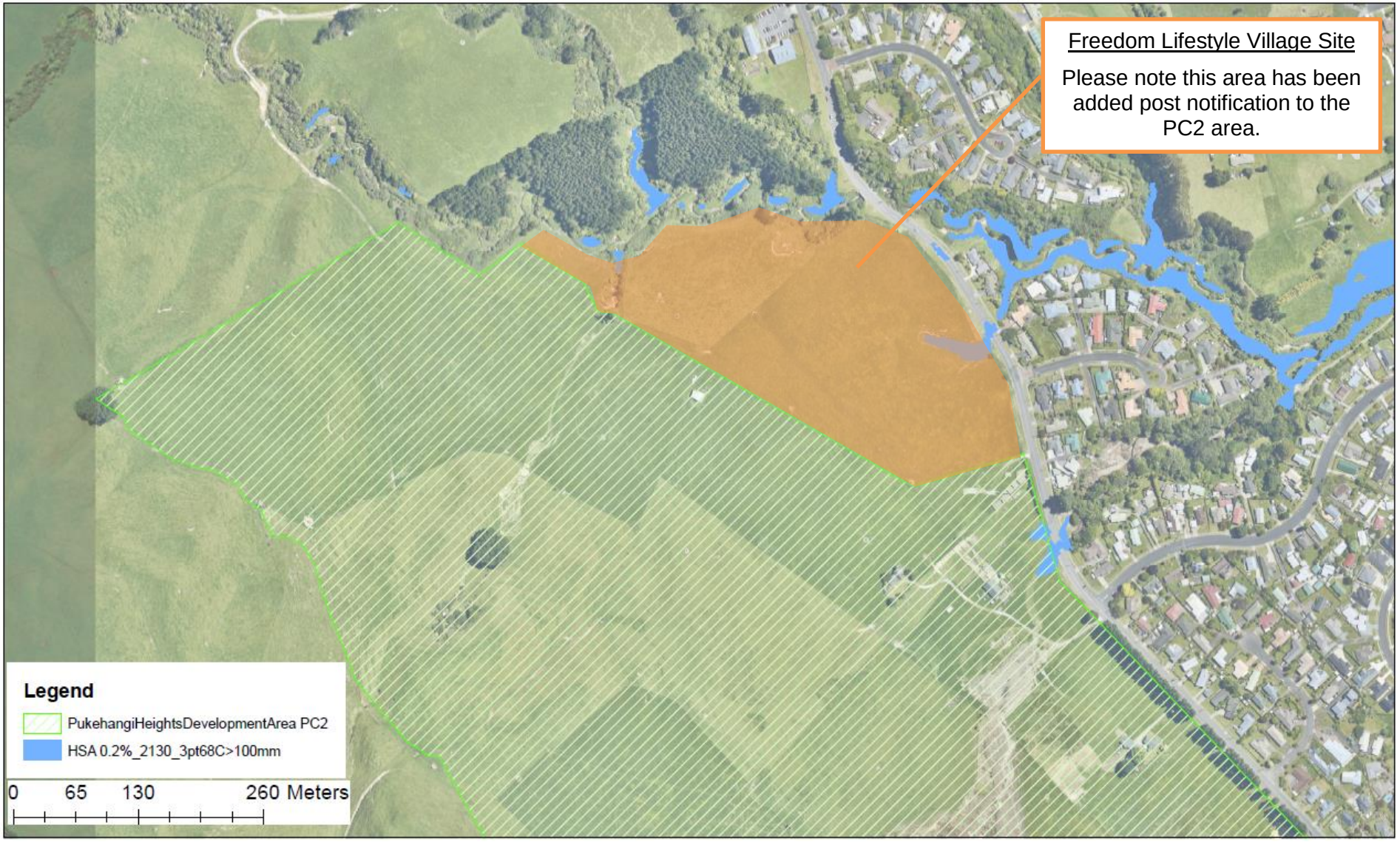

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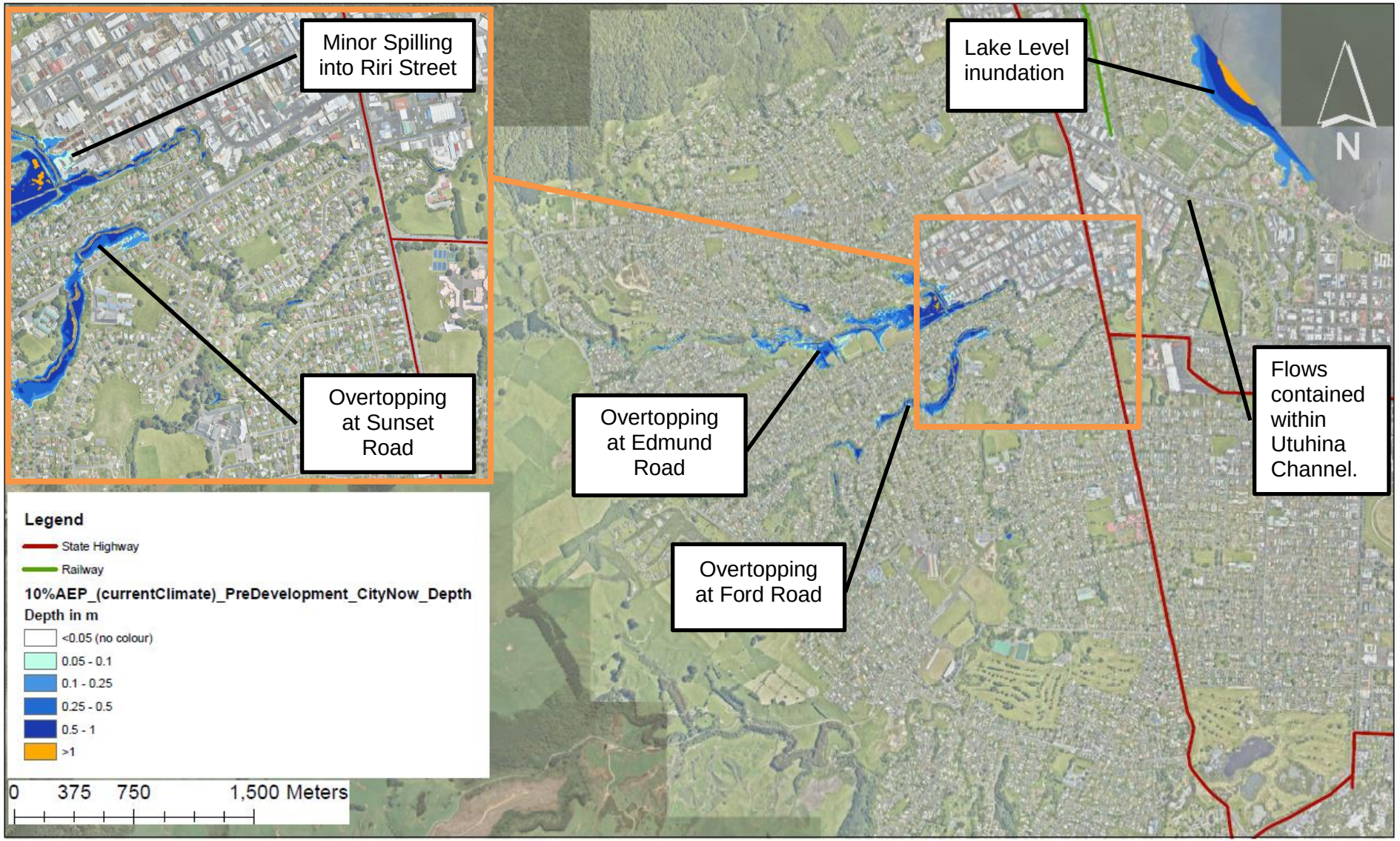

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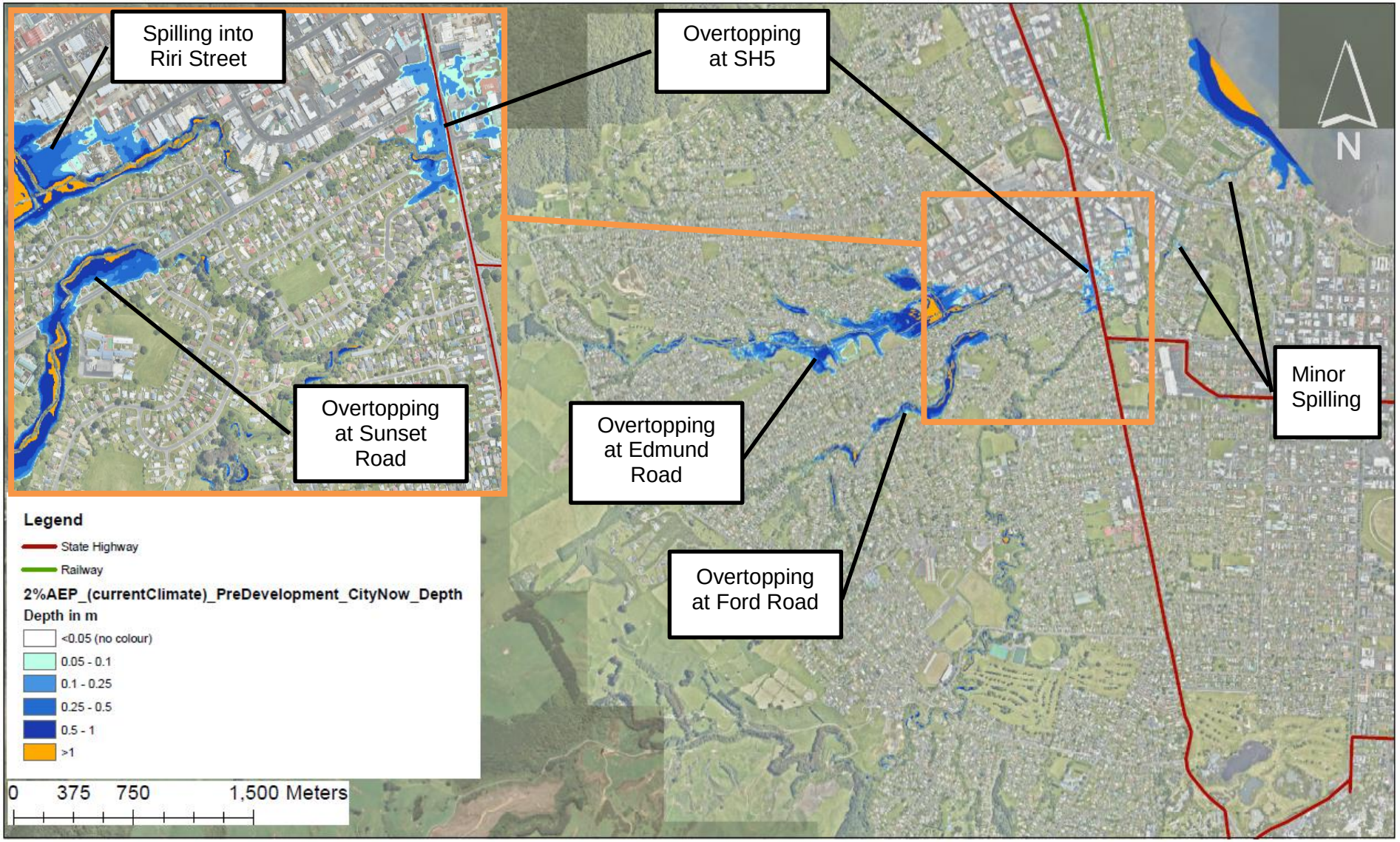

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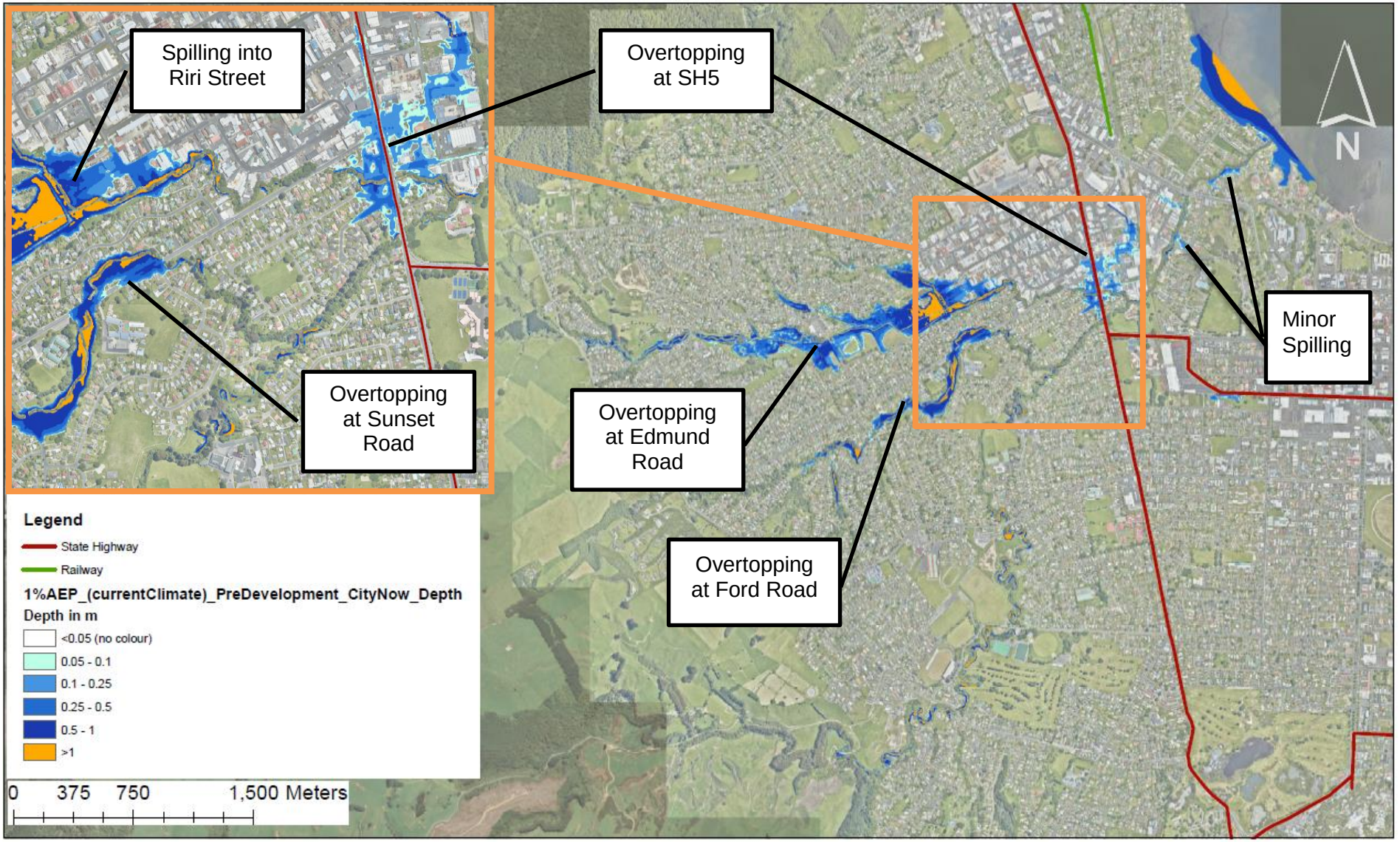

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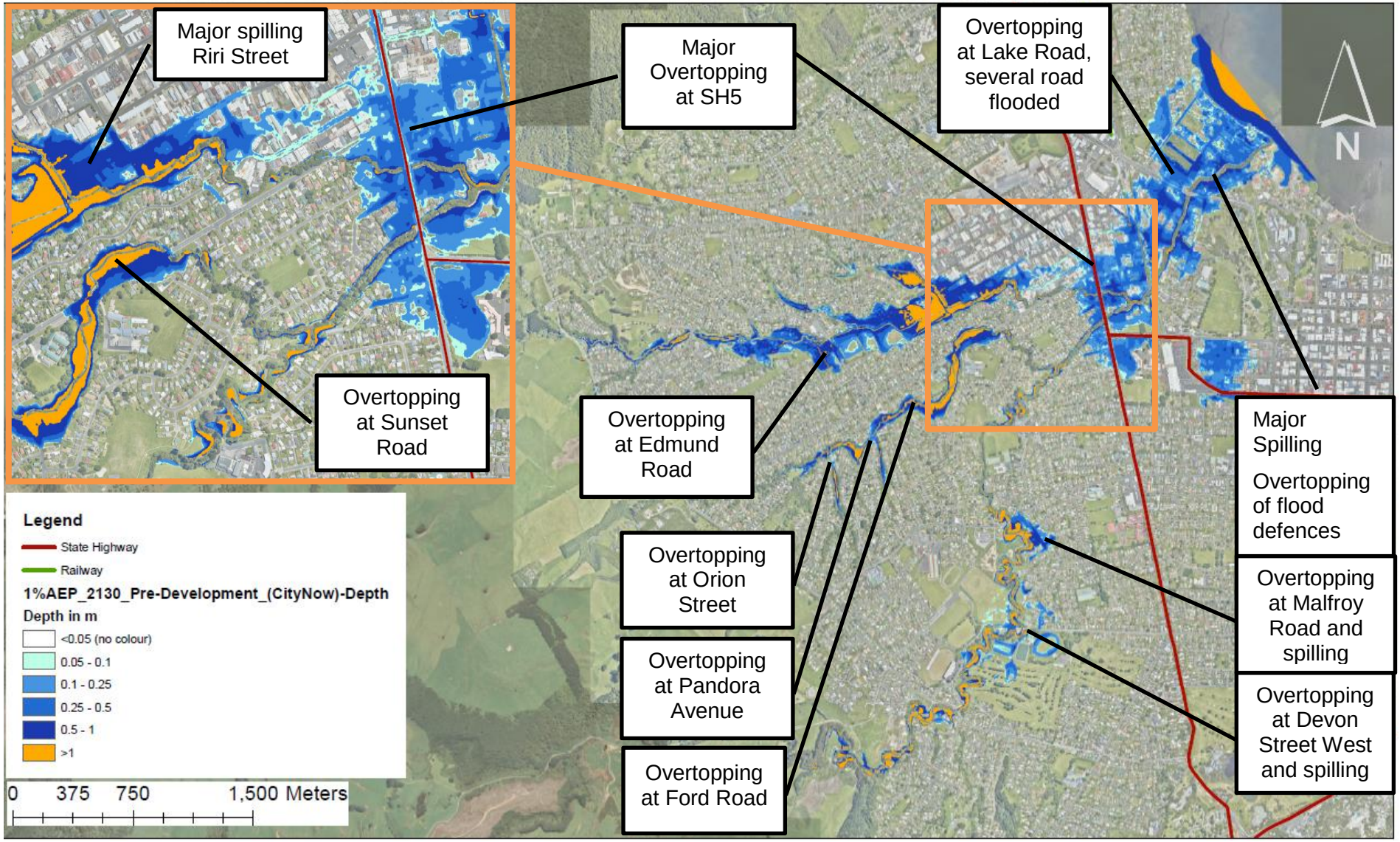

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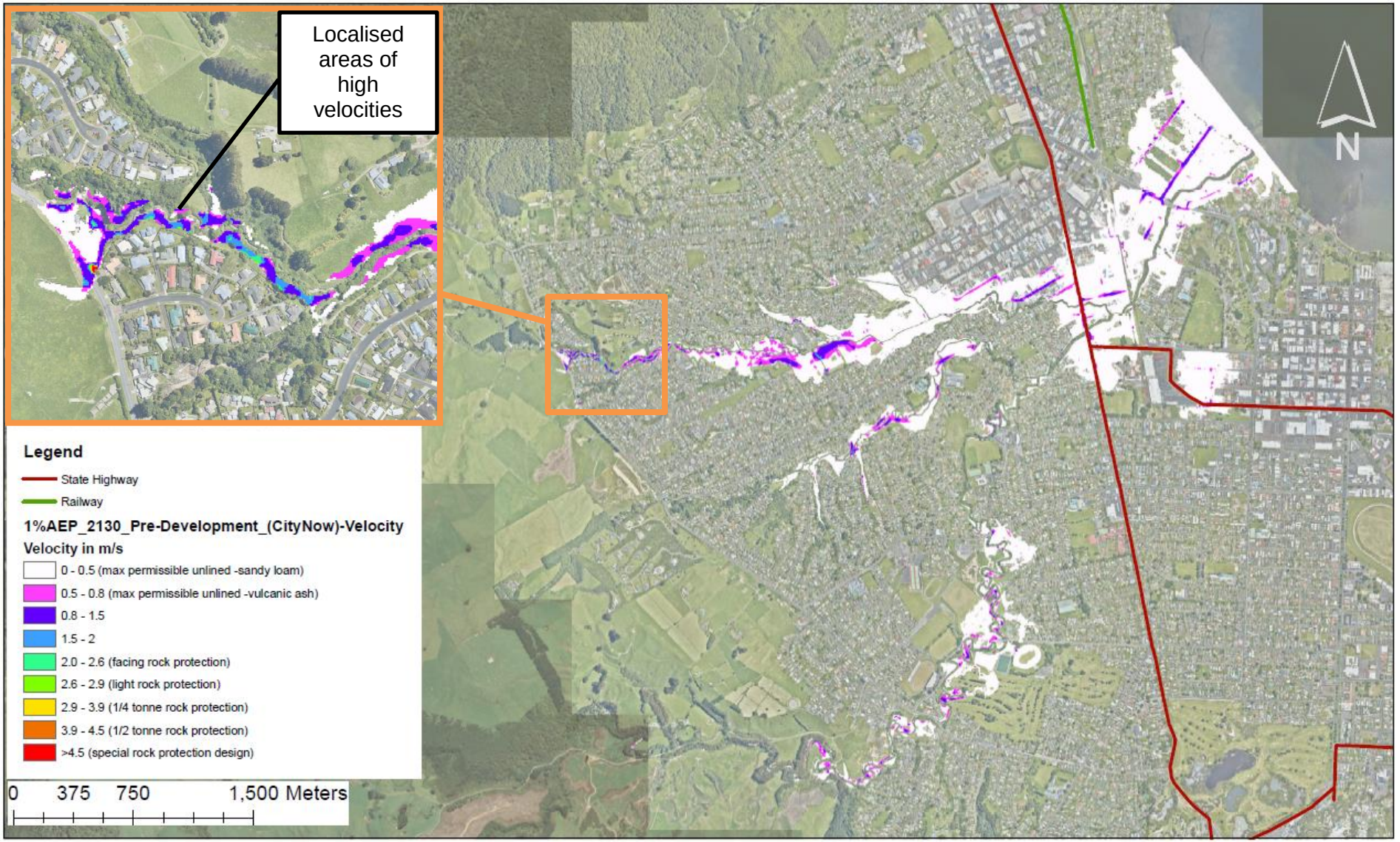

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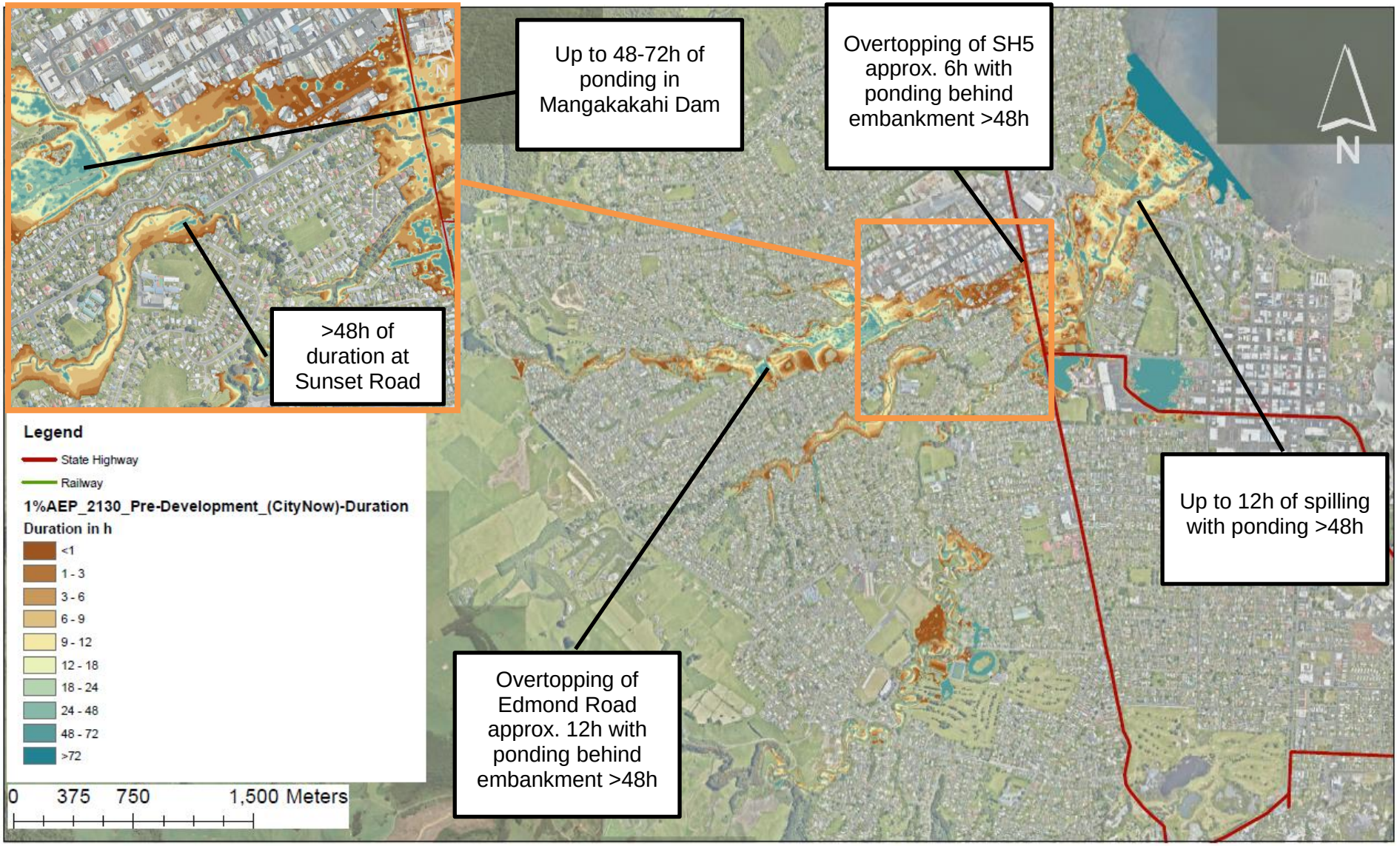

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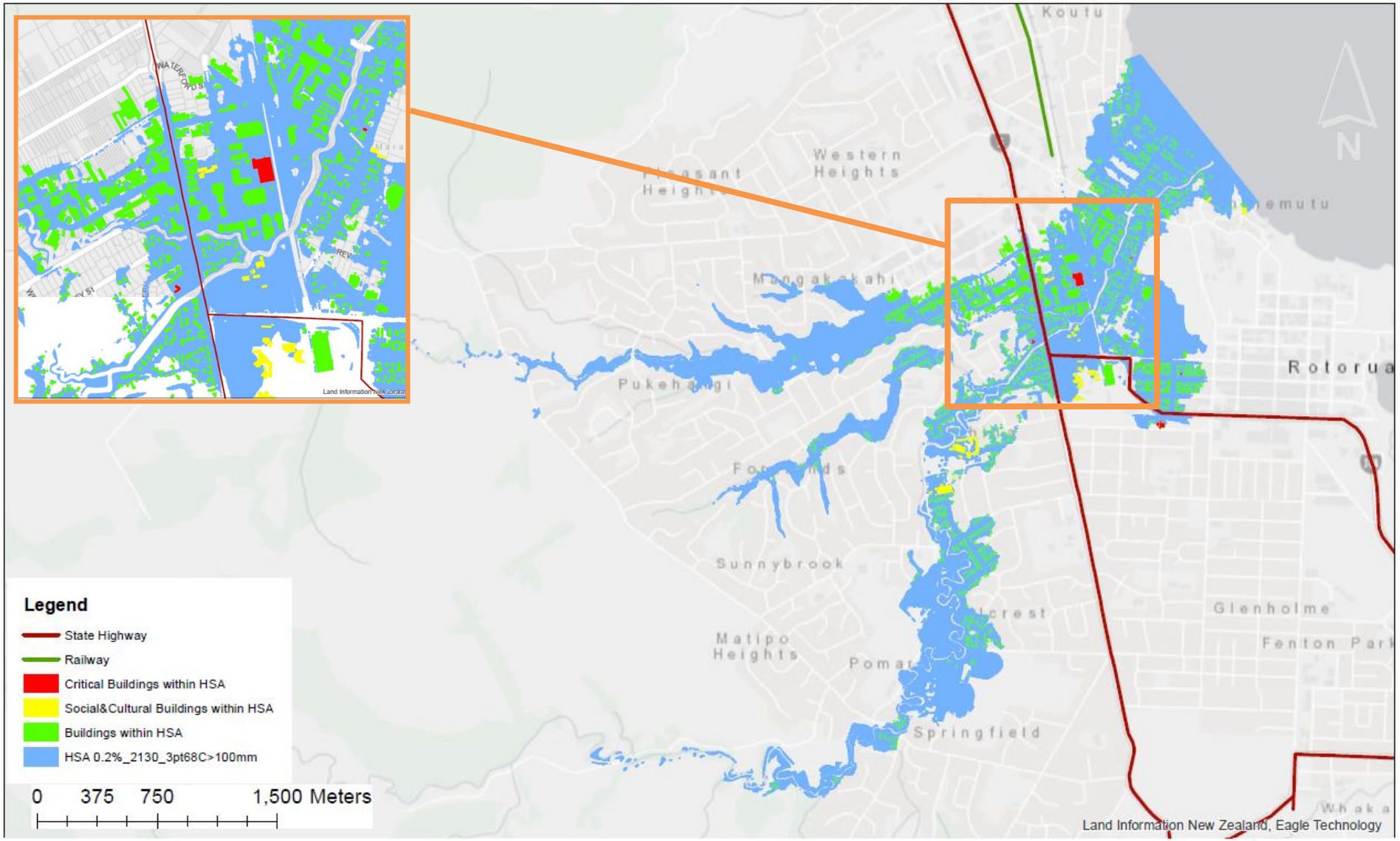

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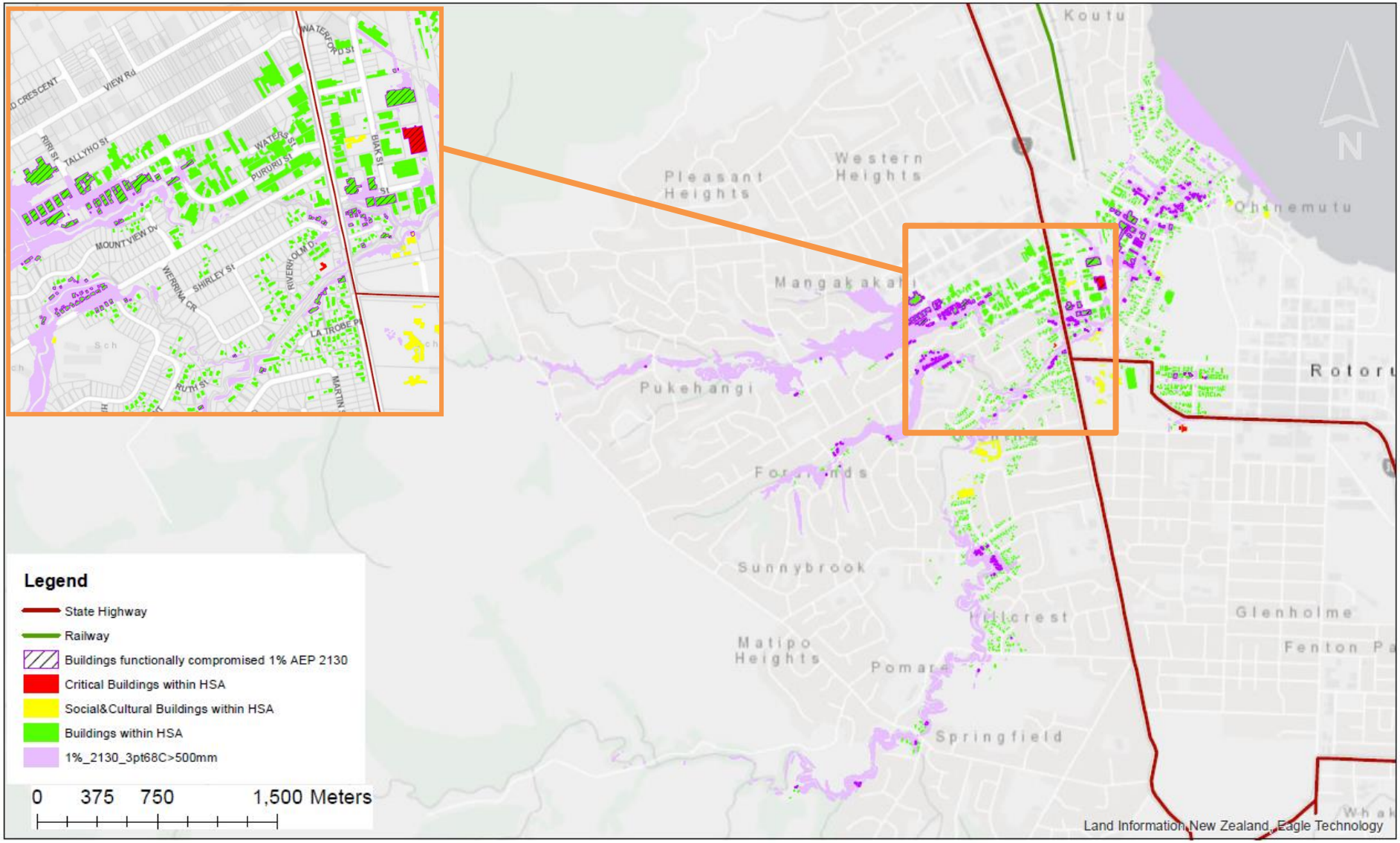

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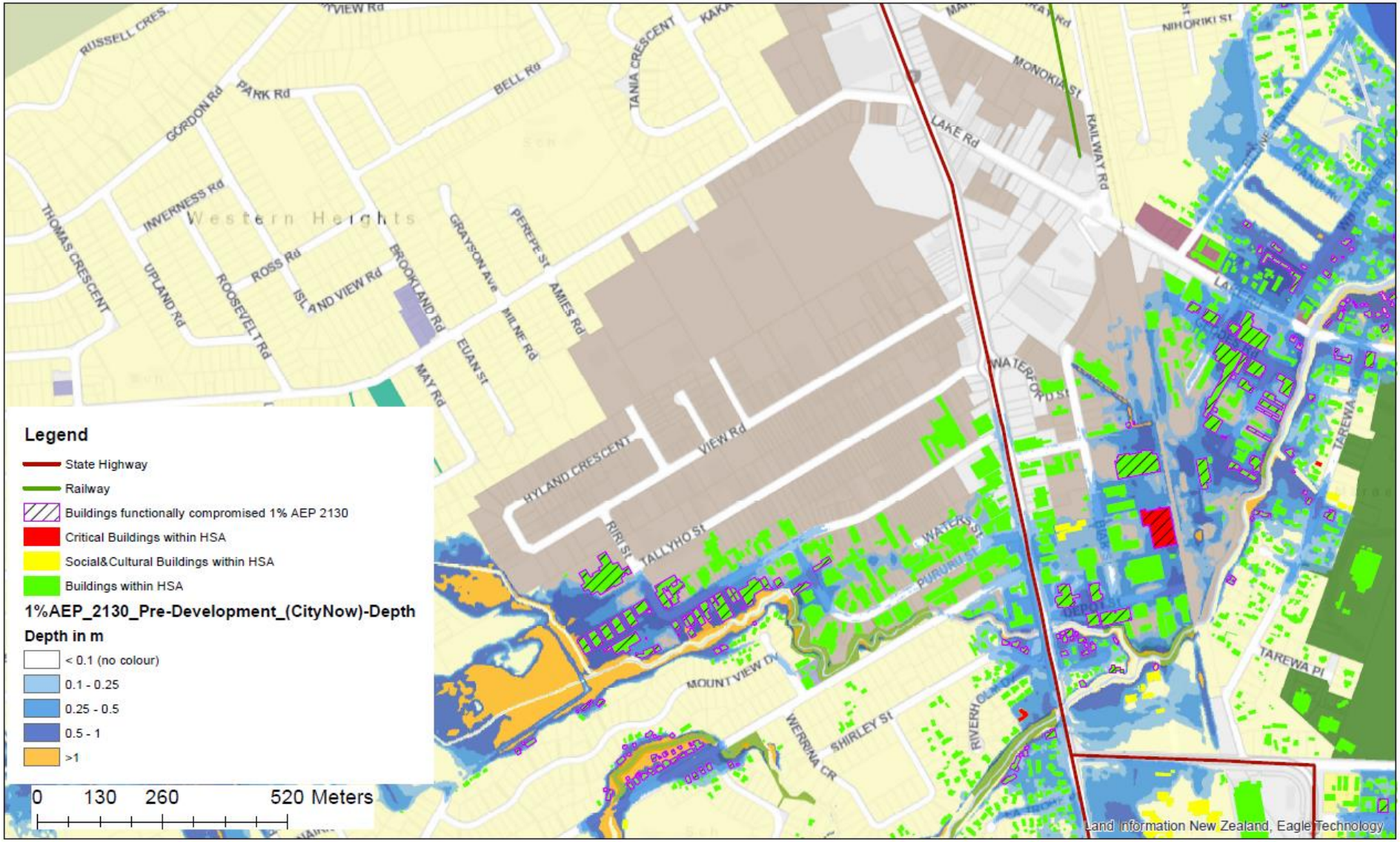

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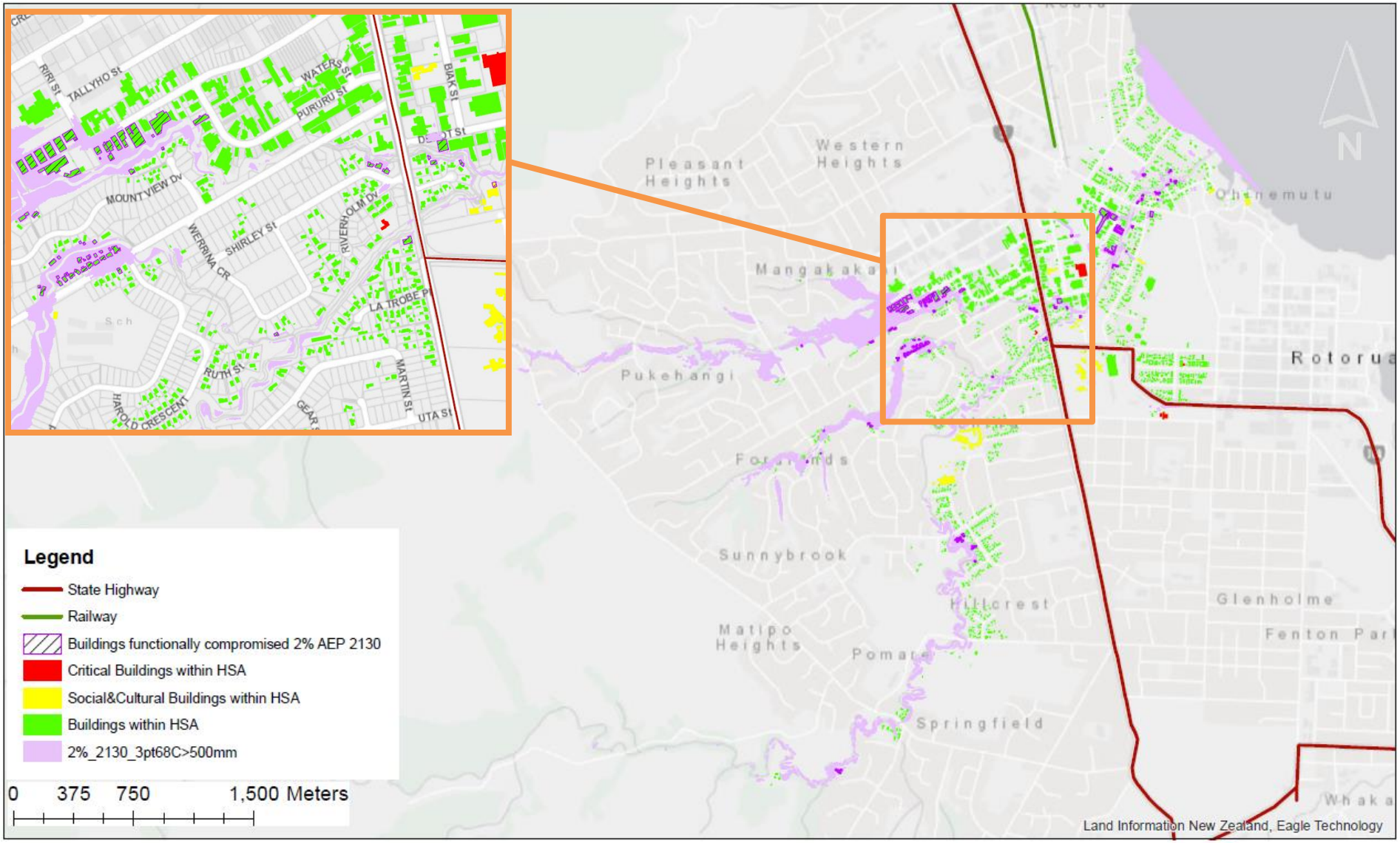

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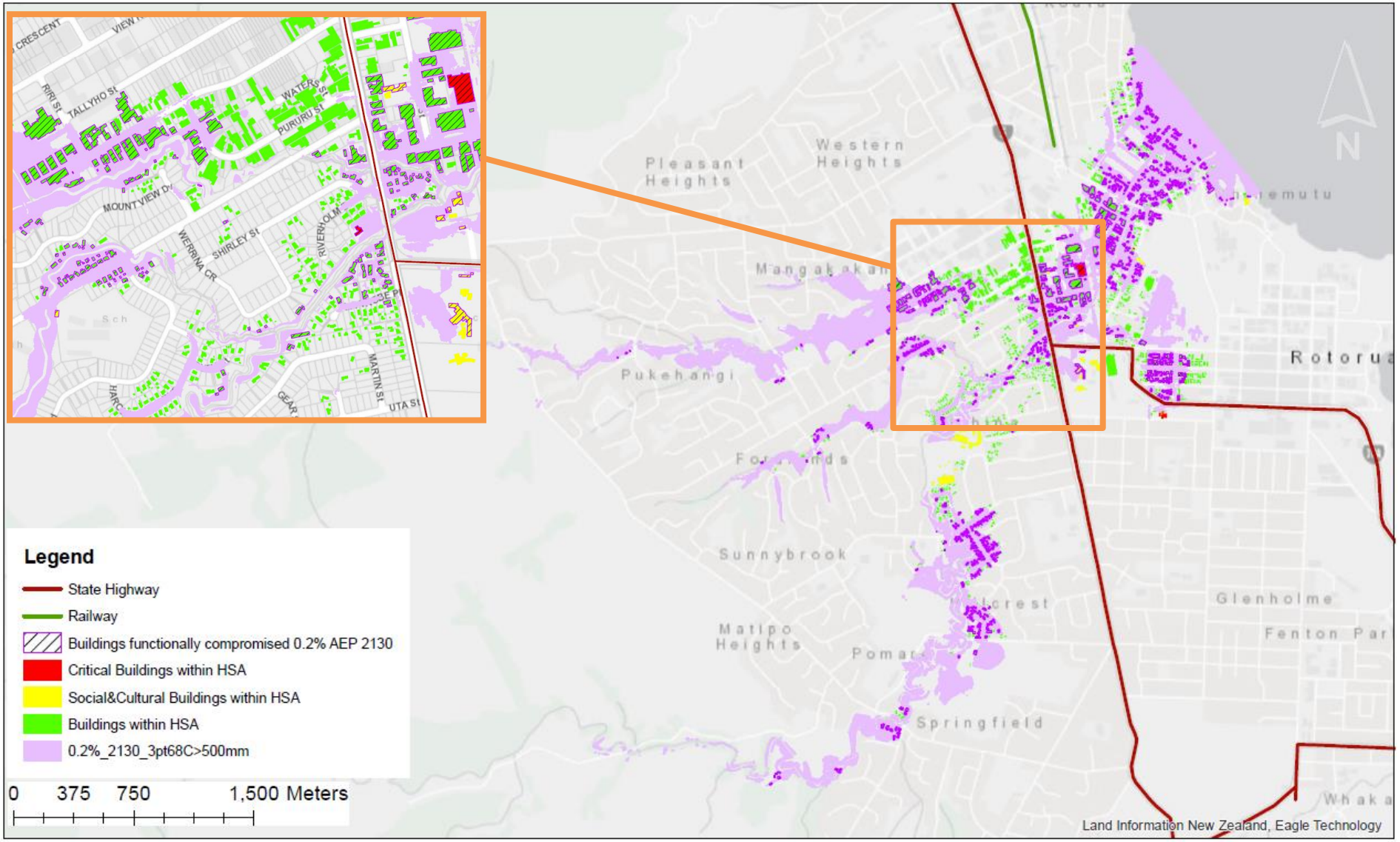

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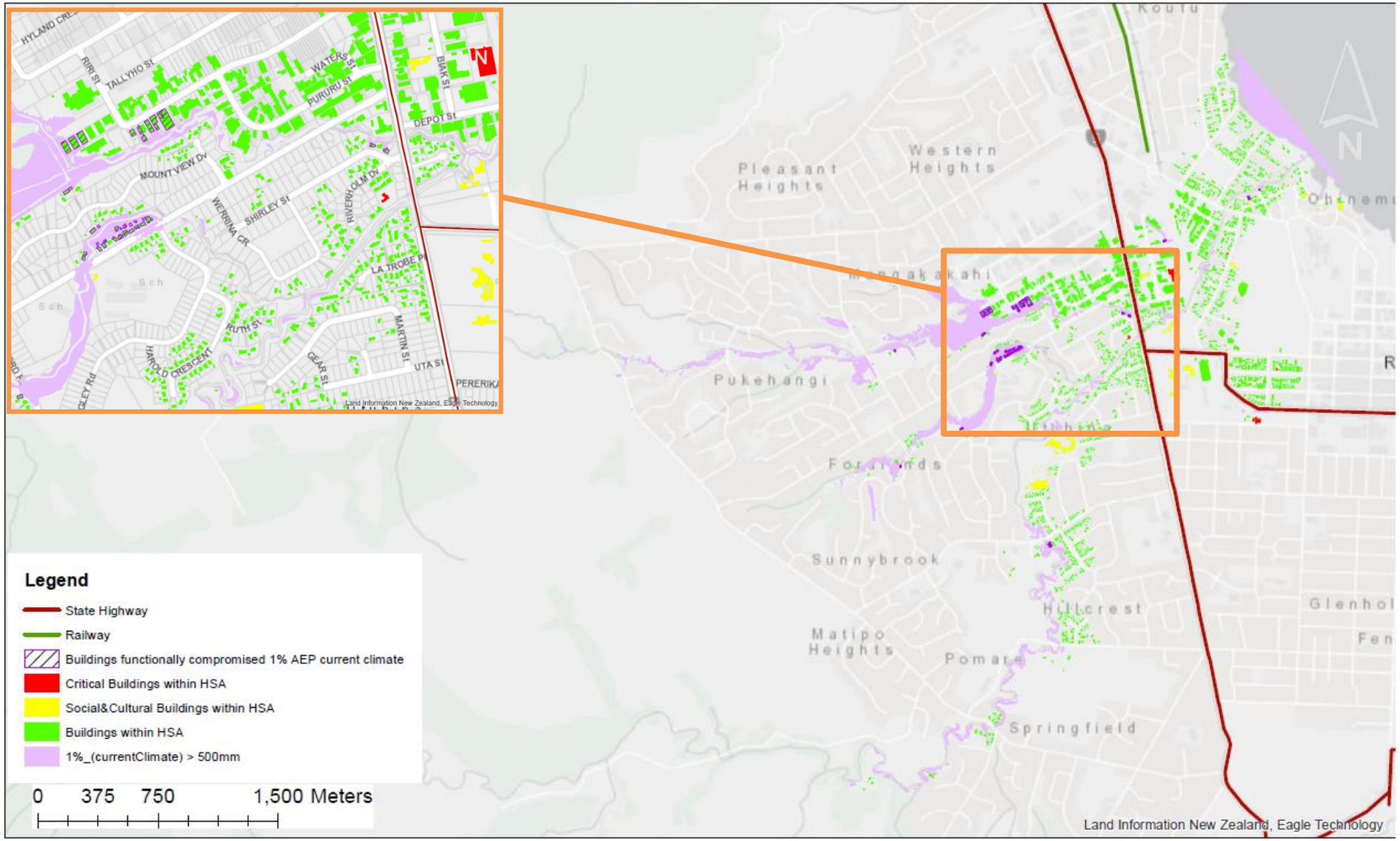

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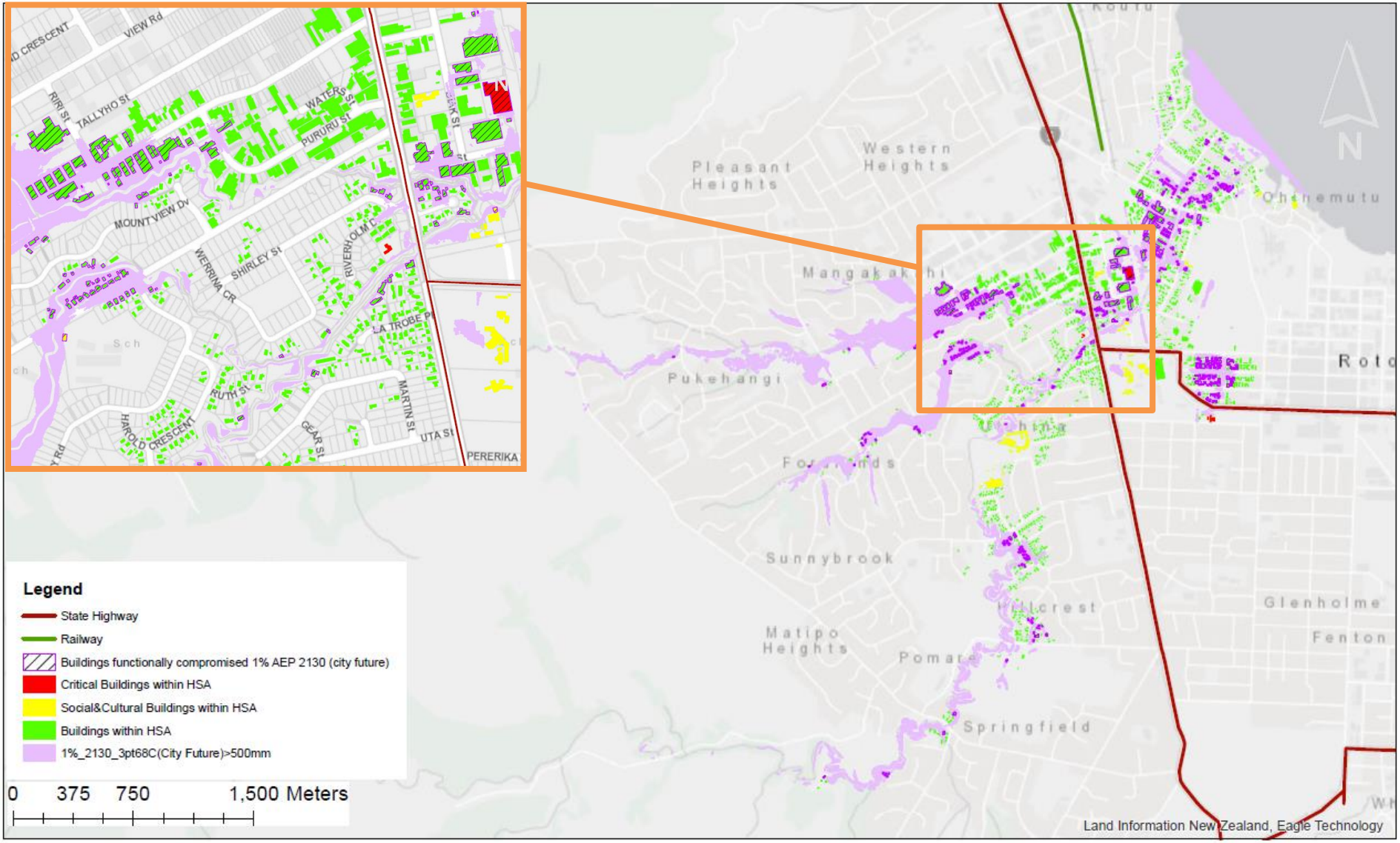


Figure 33: Primary Hazard Analysis Area (fluvial flooding only) > 500mm peak during 1% AEP 2130 – future urban environment

HSA - area covered in flooding greater than 100mm during the 0.2% City Now 2130

City Now with 100yr Climate Change (+10yr plan timeframe)

Functionally compromised building counts for different events (2130 Climate + existing urban environment)

		Finished Floor Level On Piles*			50 year Likelihood	Finished Floor Level On Piles*			100 year Likelihood	Finished Floor Level On Piles*			500 year Likelihood	
		50yr 2130 > 0.5m			>=2% AEP	100yr 2130 > 0.5m			<2-1% AEP	500yr 2130 > 0.5m			<1-0.1	
Building Type	**Total No. in HSA**	**No.**	**% compromised**	**Consequence Level**	**Risk Level**	**No.**	**% compromised**	**Consequence Level**	**Risk Level**	**No.**	**% compromised**	**Consequence Level**	**Risk Level**	**Overall Risk**
miscellaneous buildings	1687	111	6.58%	minor	medium	241	14.29%	moderate	medium	865	51.27%	catastrophic	high	high
social/cultural buildings	46	3	6.52%	moderate	medium	4	8.70%	moderate	medium	16	34.78%	catastrophic	high	
critical buildings	6	0	0.00%	insignificant	low	1	16.67%	major	medium	3	50.00%	catastrophic	high	

* count will under predict in industrial areas where slab on ground is more likely

Figure 34: Risk Assessment Overview - Primary and Secondary Hazard Analysis 2130 (fluvial flooding only)

HSA - area covered in flooding greater than 100mm during the 0.2% City Now 2130

City Now with current climate

Functionally compromised building counts for different events (Current Climate + existing urban environment)

		Finished Floor Level On Piles *			100 year Likelihood <2-1% AEP	
		100yr 2020 > 0.5m				
Building Type	Total No. in HSA	No.	% compromised	Consequence Level	Risk Level	Overall Risk
miscellaneous buildings	1687	44	2.61%	minor	low	low
social/cultural buildings	46	1	2.17%	minor	low	
critical buildings	6	0	0.00%	insignificant	low	

City Now with 100yr Climate Change (+10yr plan timeframe)

Functionally compromised building counts for different events (2130 Climate + existing urban environment)

		Finished Floor Level On Piles*			100 year Likelihood <2-1% AEP	
		100yr 2130 > 0.5m				
Building Type	Total No. in HSA	No.	% compromised	Consequence Level	Risk Level	Overall Risk
miscellaneous buildings	1687	241	14.29%	moderate	medium	medium
social/cultural buildings	46	4	8.70%	moderate	medium	
critical buildings	6	1	16.67%	major	medium	

City Future with 100yr Climate Change (+10yr plan timeframe)

Functionally compromised building counts for different events (2130 Climate + future urban environment)

	HSA (worst case)	Finished Floor Level On Piles*			100 year Likelihood <2-1% AEP	
		100yr 2130 > 0.5m				
Building Type	Total No. in HSA	No.	% compromised	Consequence Level	Risk Level	Overall Risk
miscellaneous buildings	1687	271	16.06%	moderate	medium	high
social/cultural buildings	46	5	10.87%	moderate	medium	
critical buildings	6	2	33.33%	catastrophic	high	

* count will under predict in industrial areas where slab on ground is more likely

Figure 35: Risk Assessment Overview – Comparative Primary Hazard Analysis (fluvial flooding only)

	Consequences				
Likelihood (ARI - years)	Insignificant	Minor	Moderate	Major	Catastrophic
>=2	low	medium	medium	high	high
<2-1	**low**	**low**	**medium**	**medium**	**high**
<1-0.1	low	low	medium	medium	high
<0.1-0.04	low	low	low	low	medium
<0.04	low	low	low	low	medium

0.2% AEP = 1 in 500 year event **Secondary Analysis**
1% AEP = 1 in 100 year event **Primary Analysis**
2% AEP = 1 in 50 year event **Secondary Analysis**
5% AEP = 1 in 20 year event
10% AEP = 1 in 10 year event
20% AEP = 1 in 5 year event
50% AEP = 1 in 2 year event
100% AEP = Happens every year

Quantitative analysis of consequence

Table 21 Consequence table with qualitative and quantitative descriptions.

Consequence level	Built			Lifelines utilities	Health & safety
	Social/cultural	Buildings	Critical buildings		
Catastrophic	≥25% of buildings of social/cultural significance within hazard assessment area have functionality compromised.	≥50% of buildings within hazard assessment area have functionality compromised.	≥25% of critical buildings within hazard assessment area have functionality compromised.	A lifeline utility service is out for > 1 month (affecting ≥ 20% of the town/city population) OR out for > 6 months (affecting < 20% of the town/city population).	>101 dead and/or >1001 injured
Major	11–24% of buildings of social/cultural significance within hazard assessment area have functionality compromised.	21–49% of buildings within hazard assessment area have functionality compromised.	11–24% of critical buildings within hazard assessment area have functionality compromised.	A lifeline utility service is out for 1 week – 1 month (affecting ≥ 20% of the town/city population) OR out for 6 weeks to 6 months (affecting < 20% of the town/city population).	11–100 dead and/or 101–1000 injured
Moderate	6–10% of buildings of social/cultural significance within hazard assessment area have functionality compromised.	11–20% of buildings within hazard assessment area have functionality compromised.	6–10% of critical buildings within hazard assessment area have functionality compromised.	A lifeline utility service is out for [illegible] to 1 week (affecting ≥ 20% of the town/city population) OR out for 1 week to 6 weeks (affecting < 20% of the town/city population).	2–10 dead and/or 11–100 injured
Minor	1–5% of buildings of social/cultural significance within hazard assessment area have functionality compromised.	2–10% of buildings within hazard assessment area have functionality compromised.	1–5% of critical buildings within hazard assessment area have functionality compromised.	A lifeline utility service is out for 2 hours to 1 day (affecting ≥ 20% of the town/city population) OR out for 1 day to 1 week (affecting < 20% of the town/city population).	≤1 dead and/or 1–10 injured
Insignificant	No buildings of social/cultural significance within hazard assessment area have functionality compromised.	<1% of buildings within hazard assessment area have functionality compromised.	No damage within hazard assessment area, fully functional.	A lifeline utility service is out for up to 2 hours (affecting ≥ 20% of the town/city population) OR out for up to 1 day (affecting < 20% of the town/city population).	No dead No injured

Not assessed

NB for the purpose of Table 21:

- *the term "town/city population" means the catchment of people within the hazard assessment area that is served by the lifeline utility, except that with respect to a lifeline utility that predominantly or exclusively serves a population outside the hazard assessment area, it means the population in the area served by the lifeline utility.*
- *the applicable consequence level will be the one that corresponds to the row that represents the highest measured or estimated consequence.*

Figure 36: Risk Assessment Overview – Risk Matrix and Consequence Table

Figure 37: Hazard Vulnerability Classification DxV 1% AEP 2020 pre-development – existing urban environment

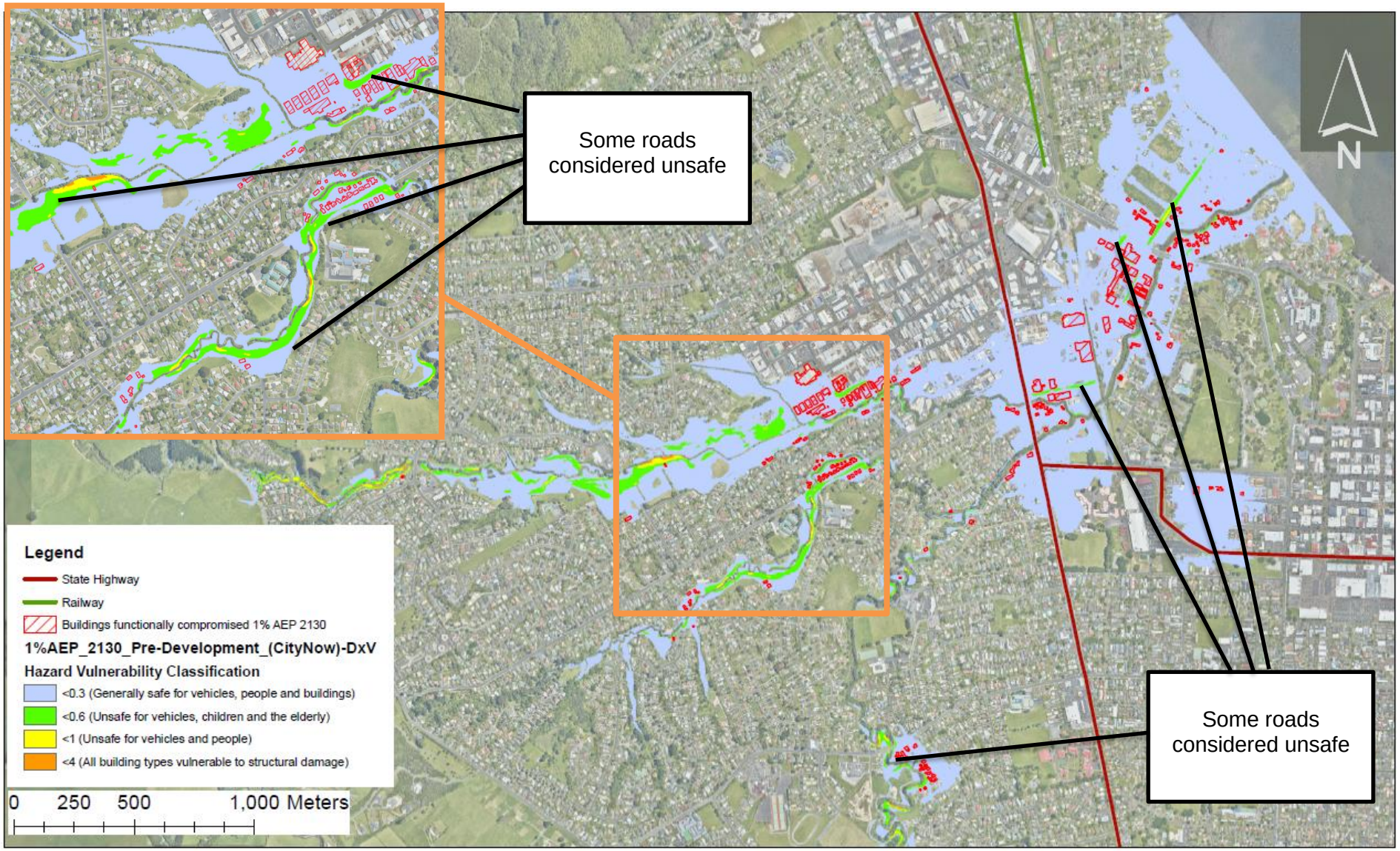


Figure 38: Hazard Vulnerability Classification DxV 1% AEP 2130 pre-development – existing urban environment

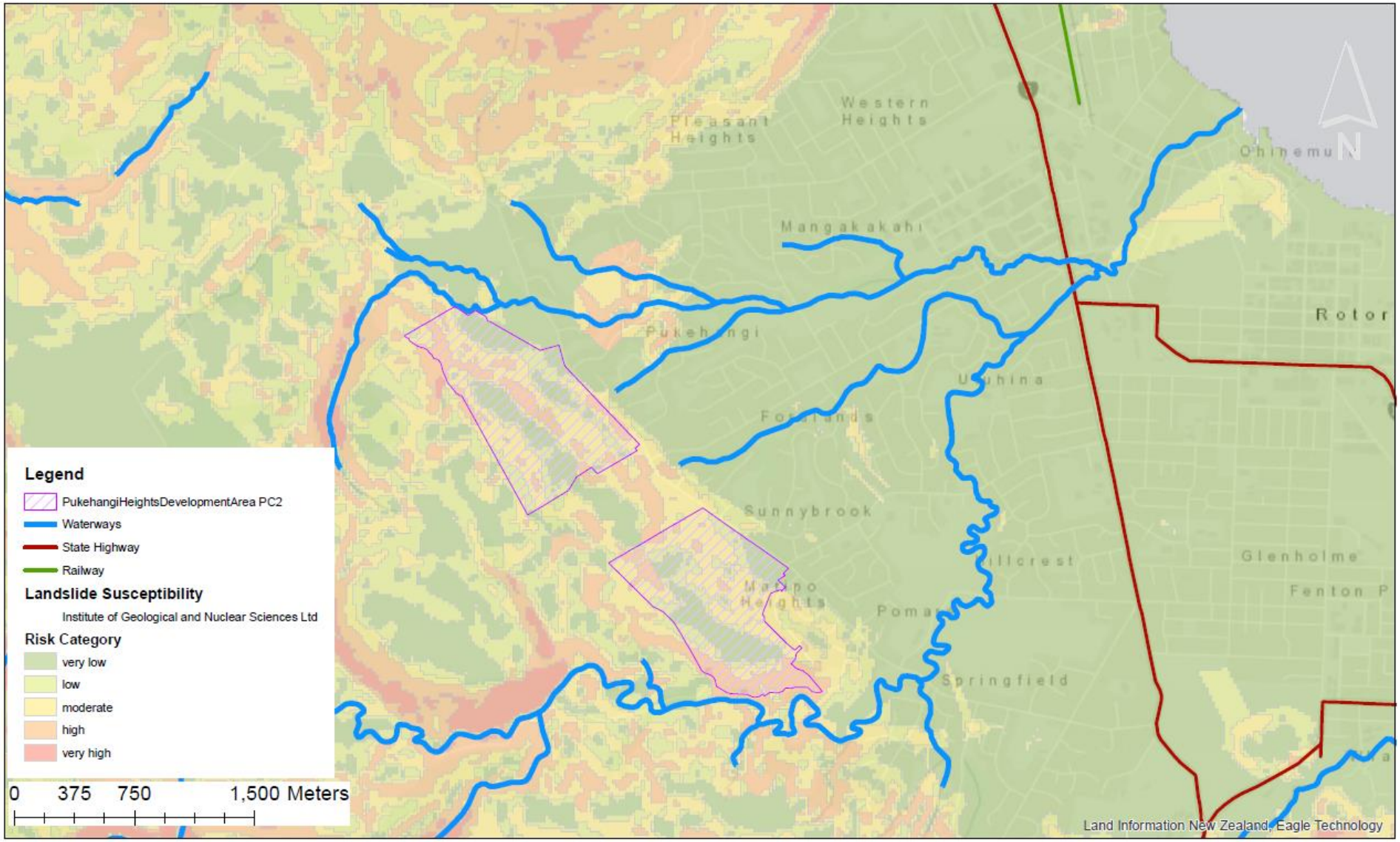
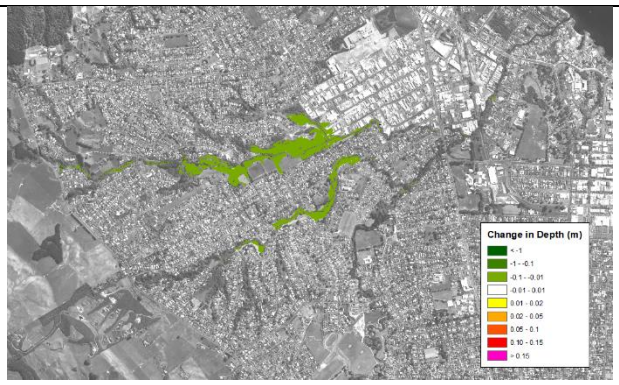
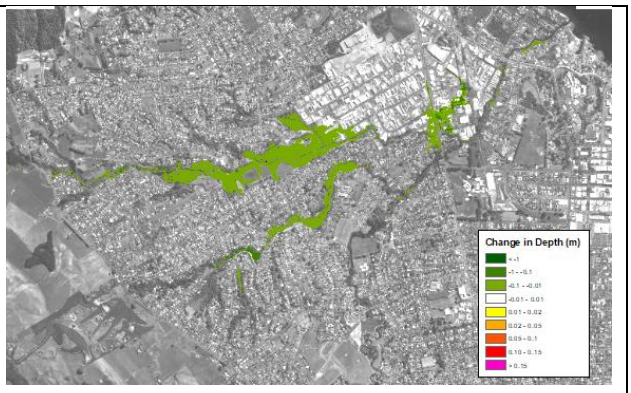


Figure 39: Landslide Susceptibility

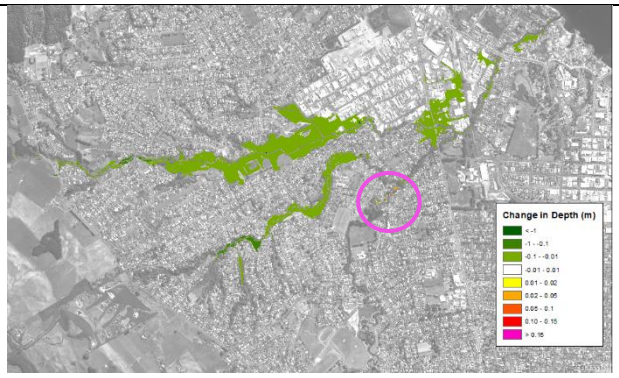
Overview of Post Development Impact



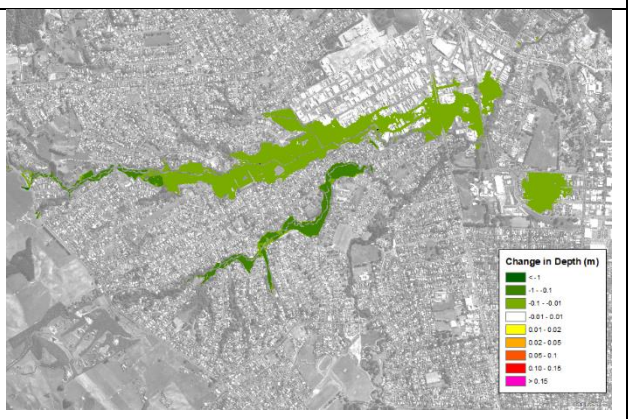
10% Current Climate – Existing Urban Environment



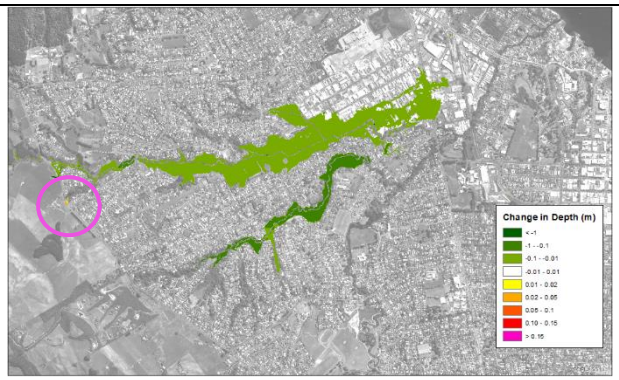
2% Current Climate – Existing Urban Environment



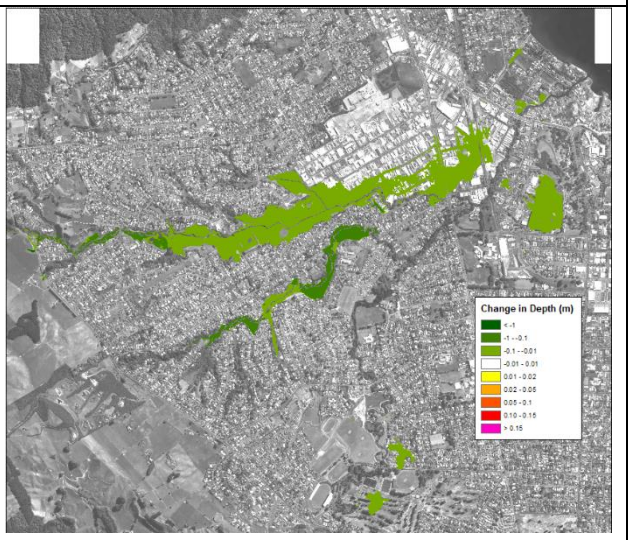
1% Current Climate – Existing Urban Environment



1% 2130 – Existing Urban Environment

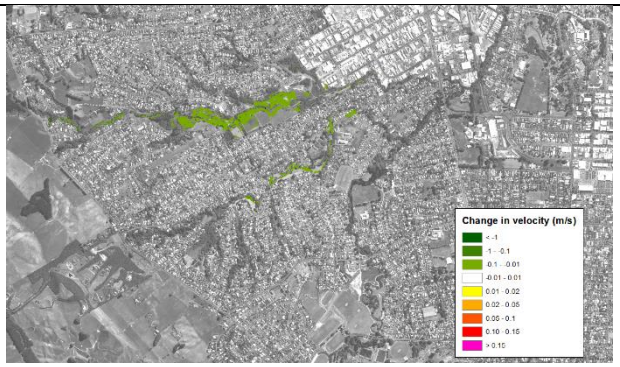


0.2% 2130 – Existing Urban Environment

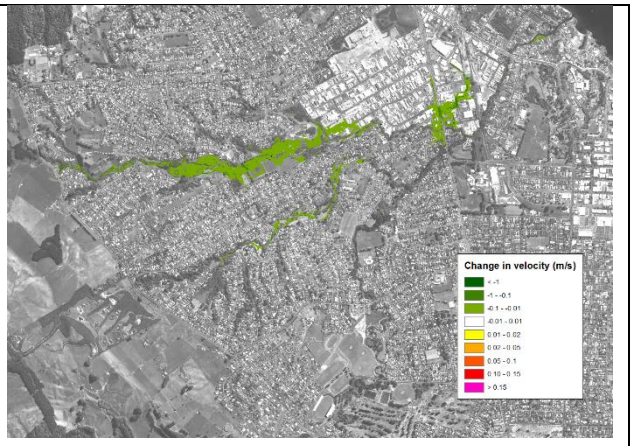


1% 2130 – Future Urban Environment

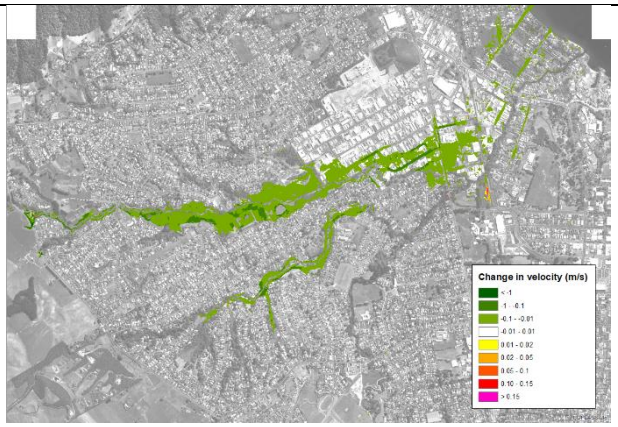
Figure 40: GUCM Scenario 15 Depth Impact



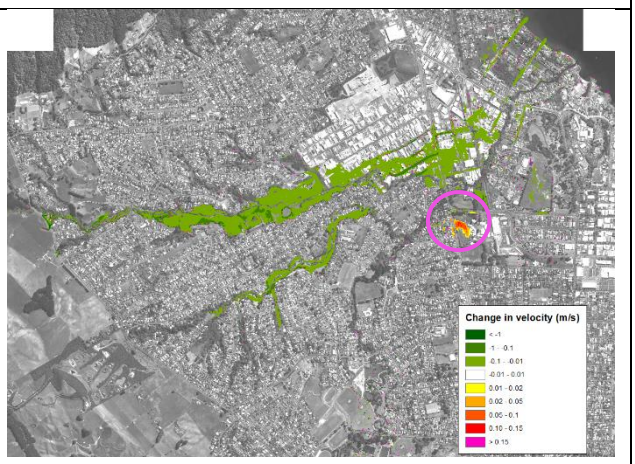
10% Current Climate2 – Existing Urban Environment



2% Current Climate – Existing Urban Environment



1% 2130 – Existing Urban Environment



1% 2130 – Future Urban Environment

Figure 41: GUCM Scenario 15 Velocity Impact

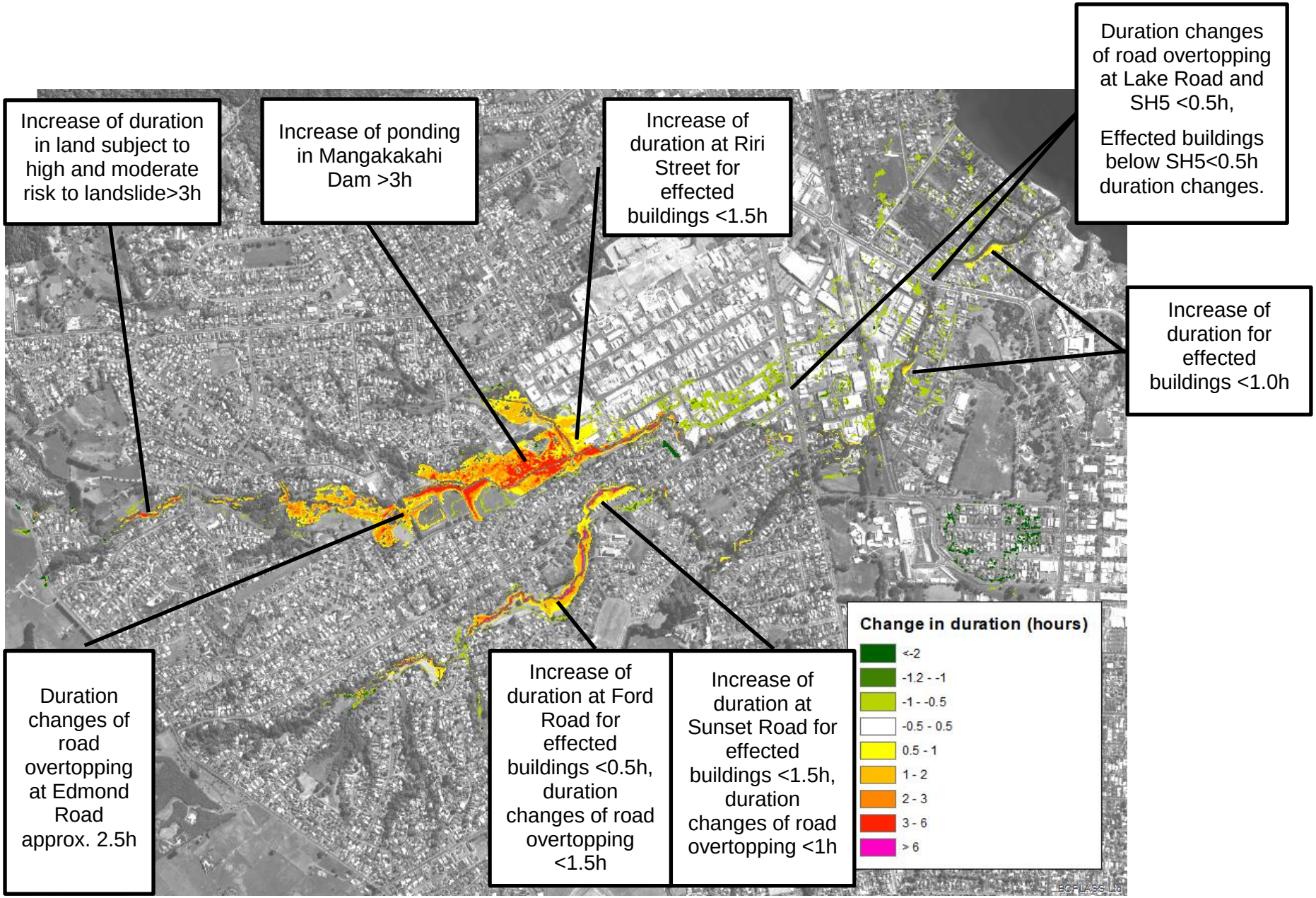


Figure 42: GUCM 1% 2130 – Existing Urban Environment Scenario 15 Duration Impact

Figure 43: Hazard Vulnerability Classification DxV 1% AEP 2020 post-development – existing urban environment

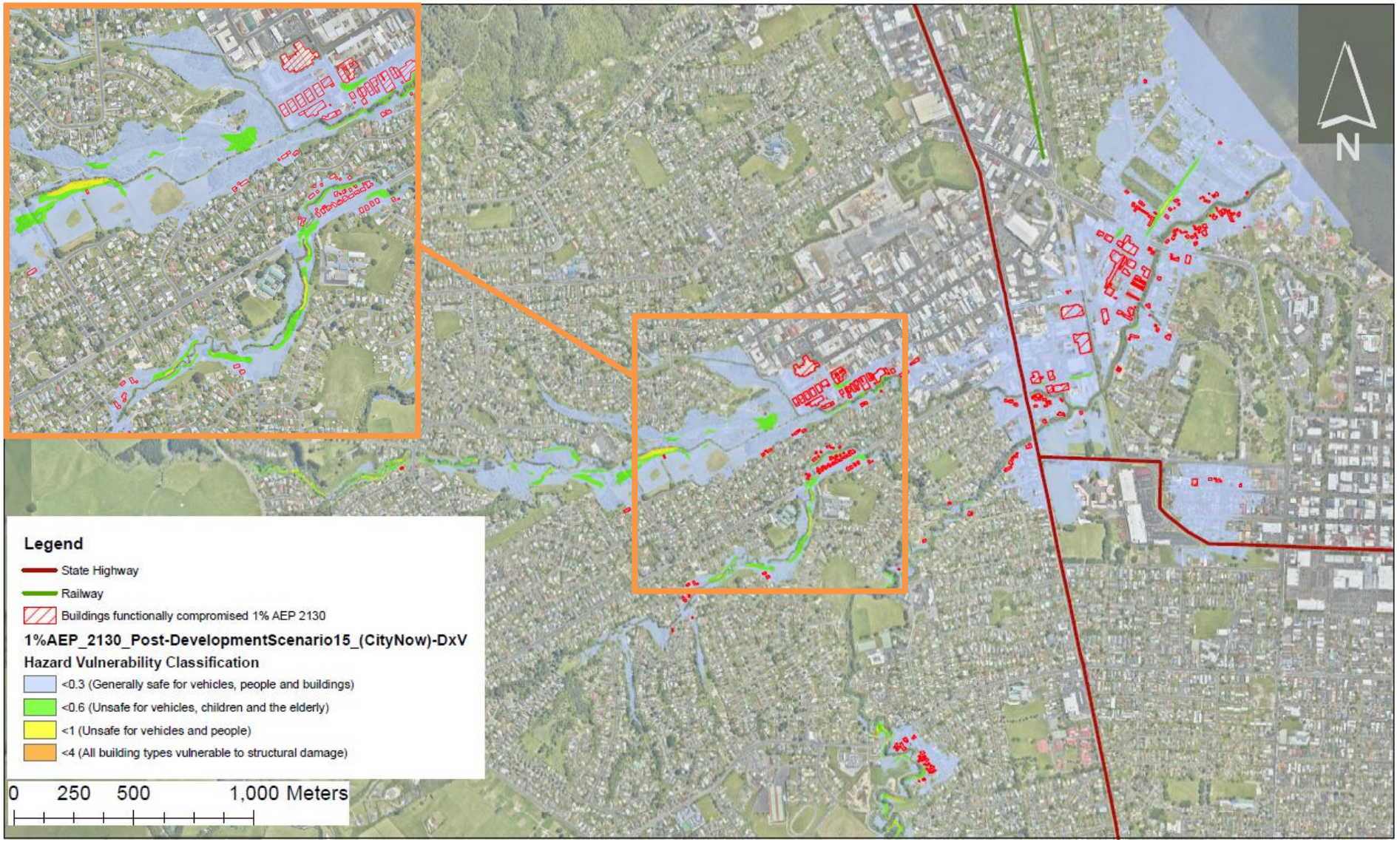


Figure 44: Hazard Vulnerability Classification DxV 1% AEP 2130 post-development – existing urban environment

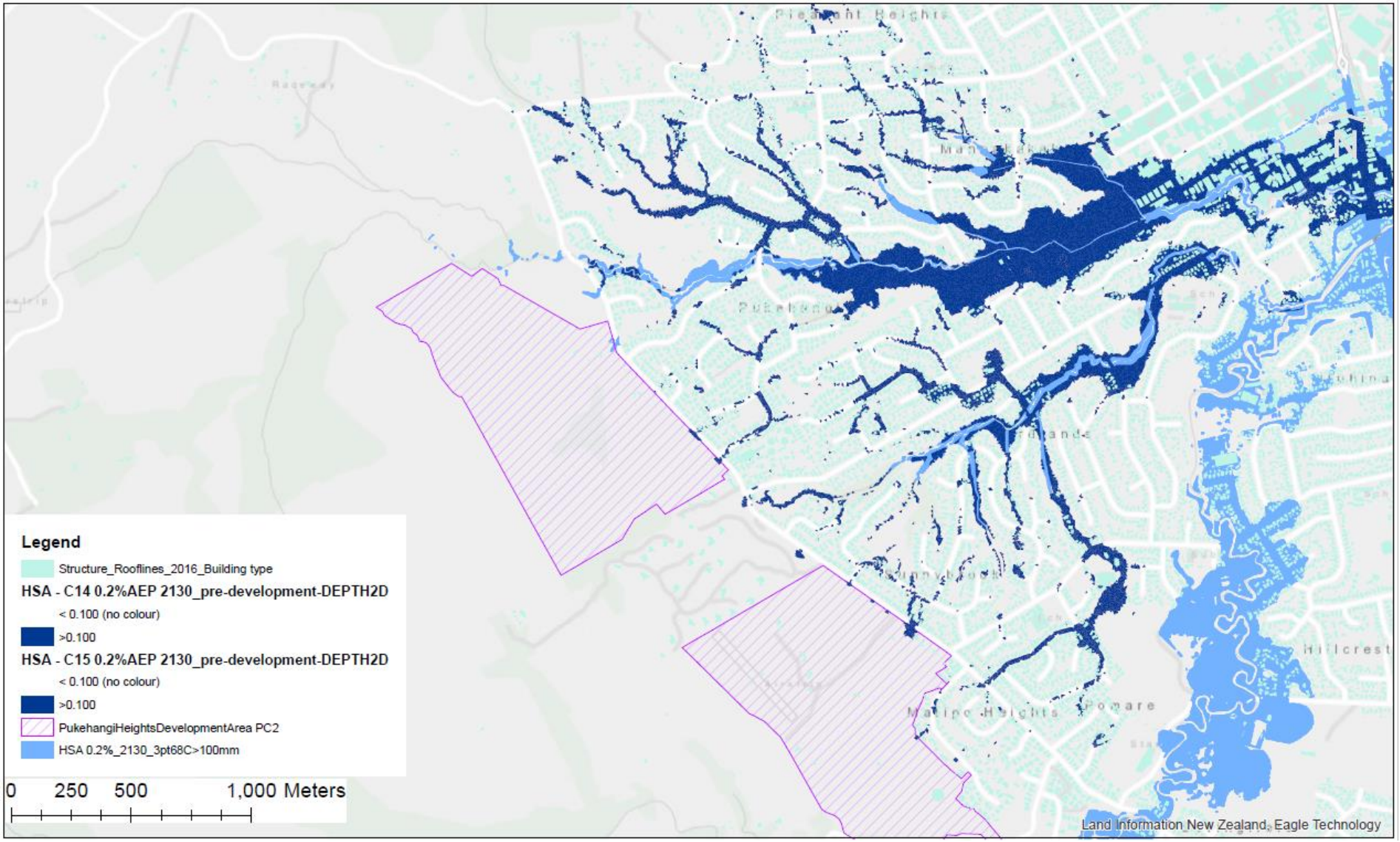


Figure 45: HSA 0.2% AEP 2130 >100mm pre- development flood extent– existing urban environment

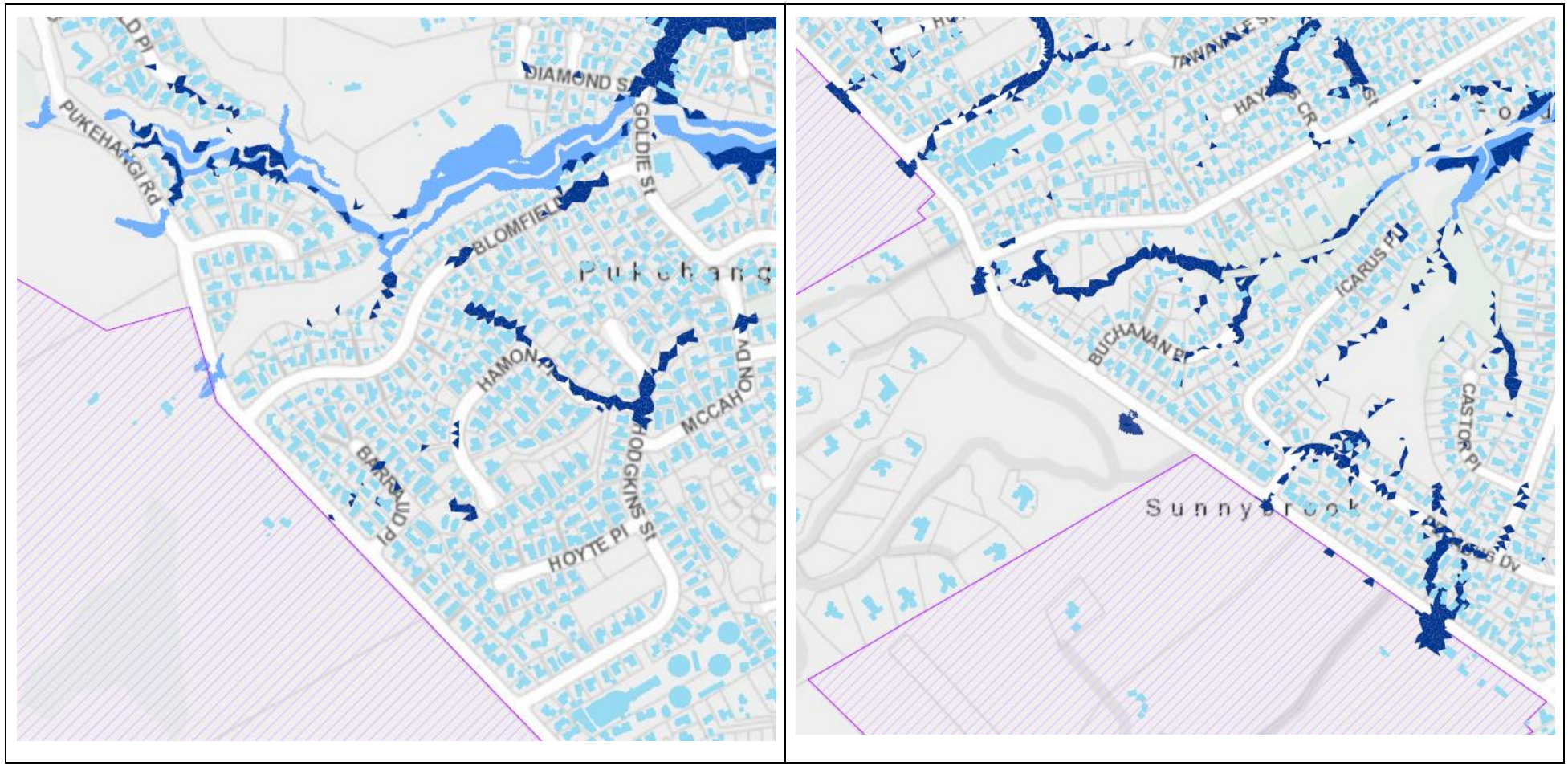


Figure 46: HSA 0.2% AEP 2130 >100mm pre- development flood extent– existing urban environment- Immediately Downstream of PC2

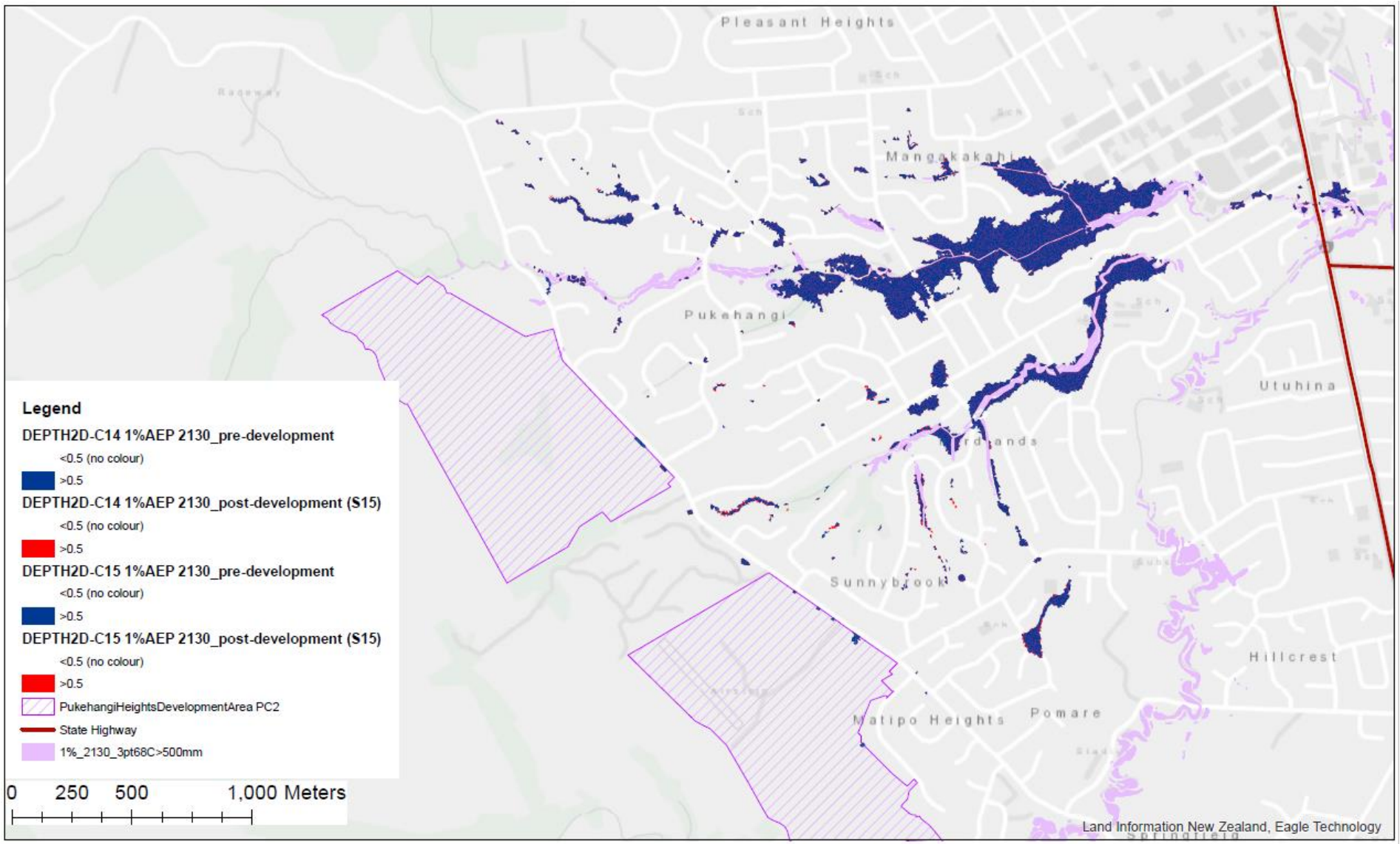


Figure 47: 1% AEP 2130 >500mm pre- and post-development flood extent– existing urban environment

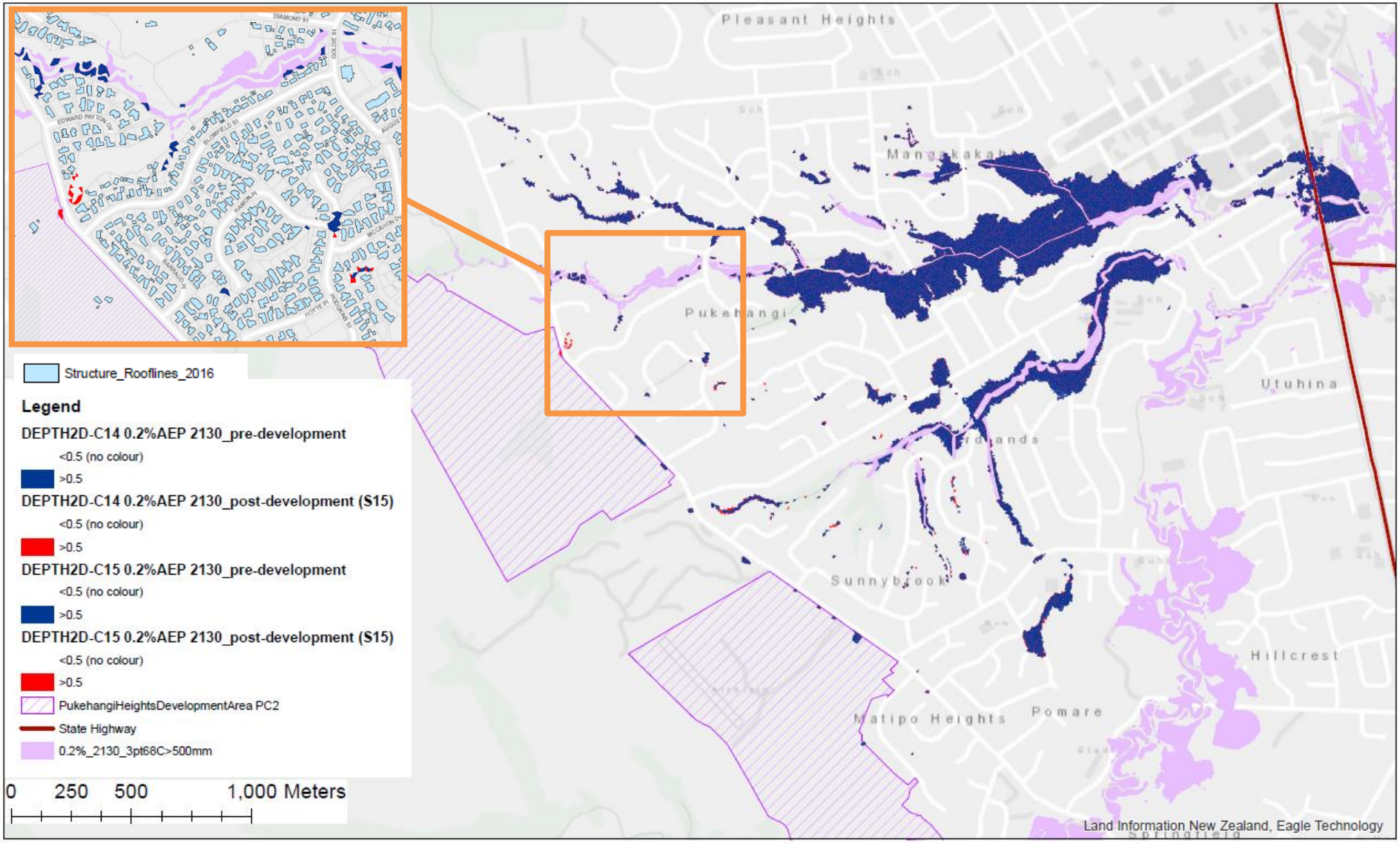


Figure 48: 0.2% AEP 2130 >500mm pre- and post-development flood extent– existing urban environment

Limitation on Addressing Existing Flood Risk

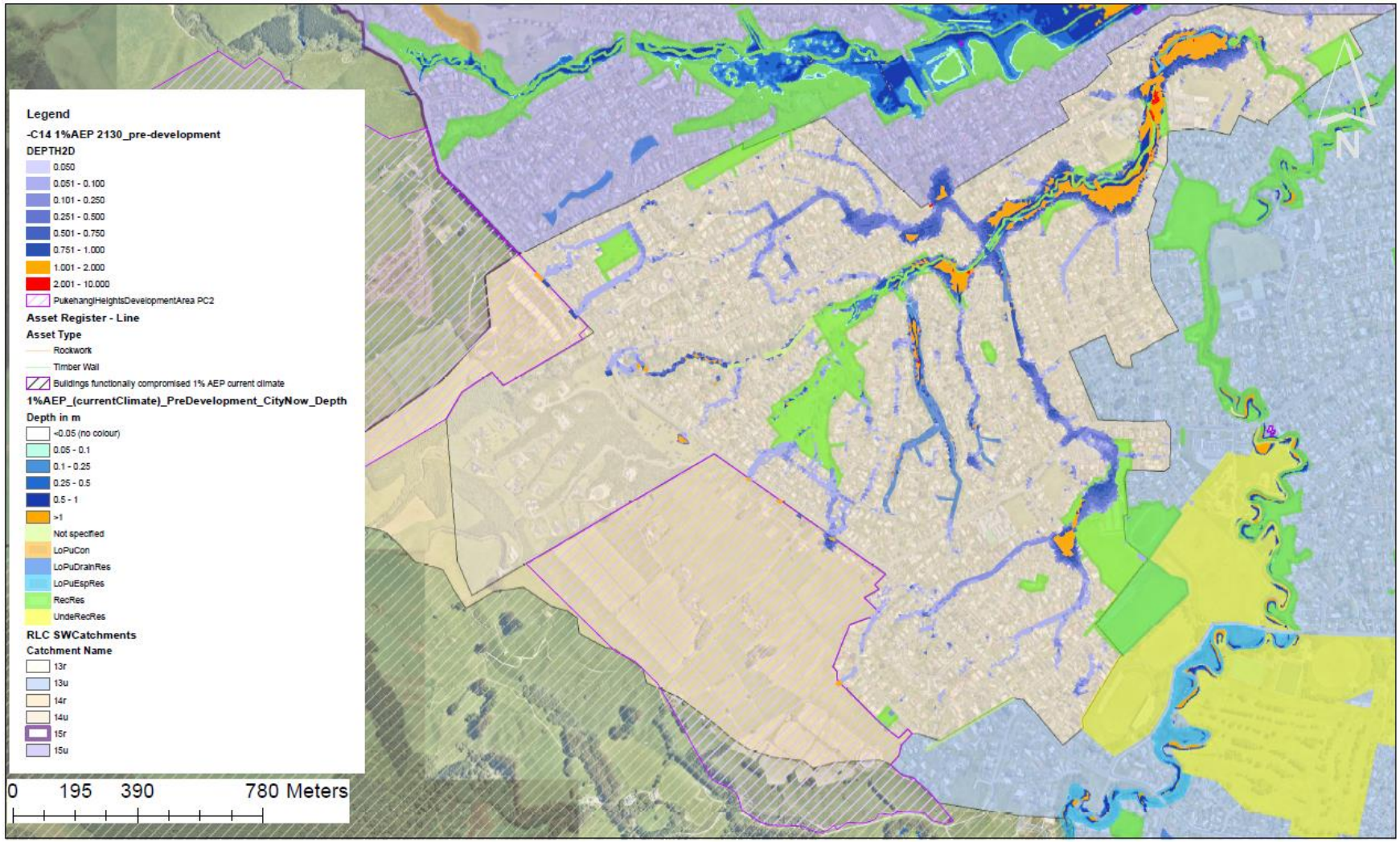


Figure 49: Otamatea – limited offside mitigation option

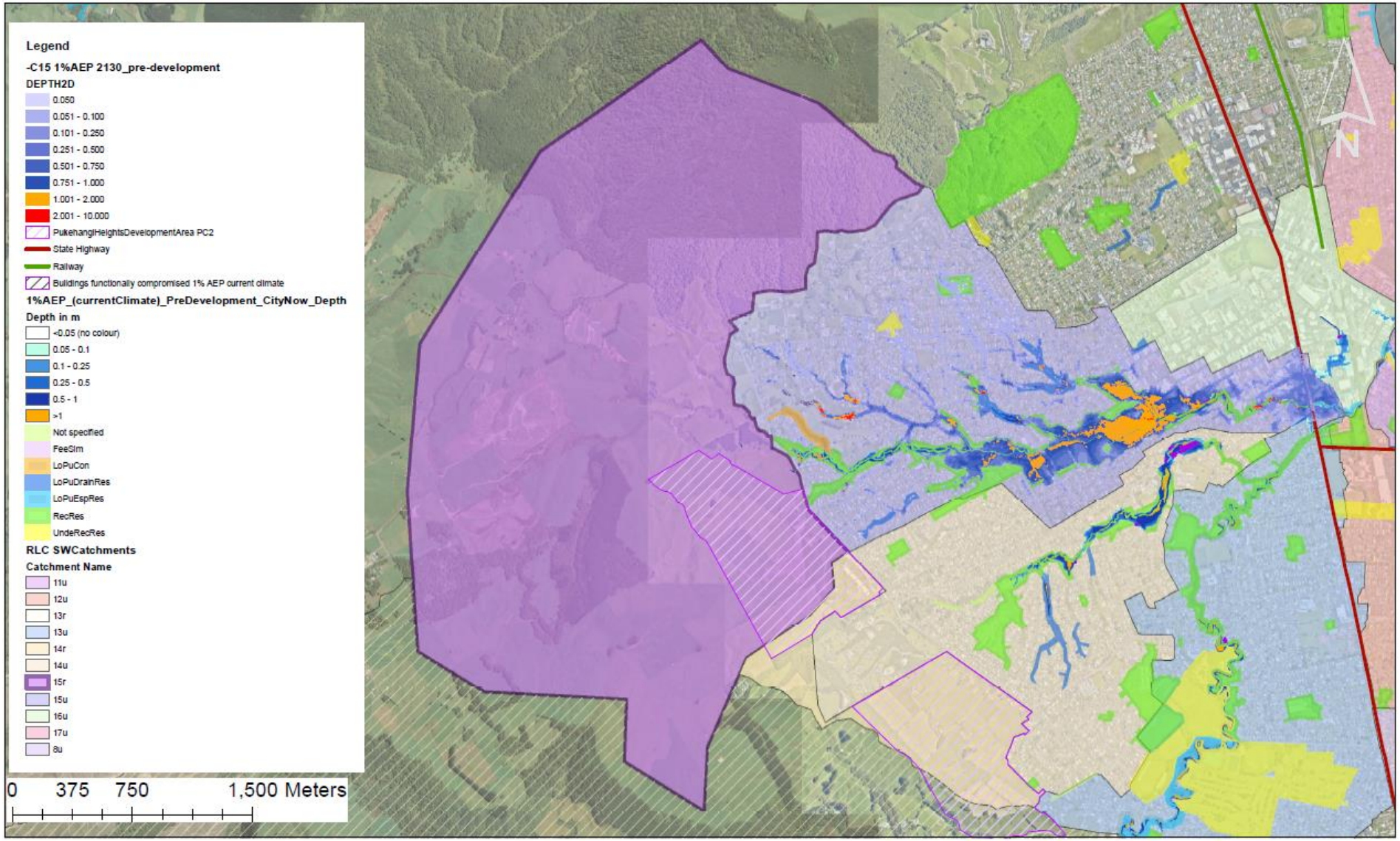
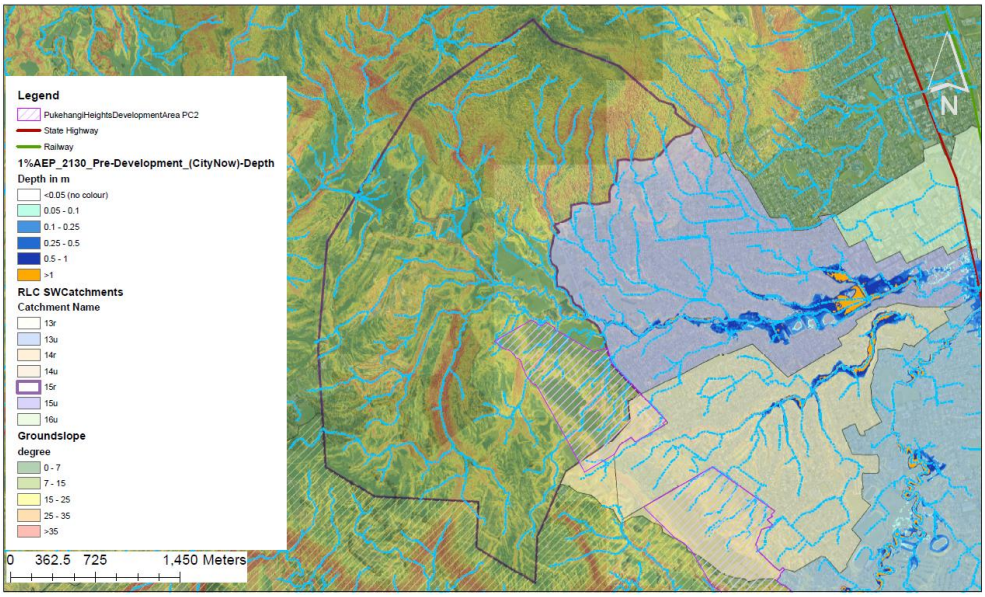
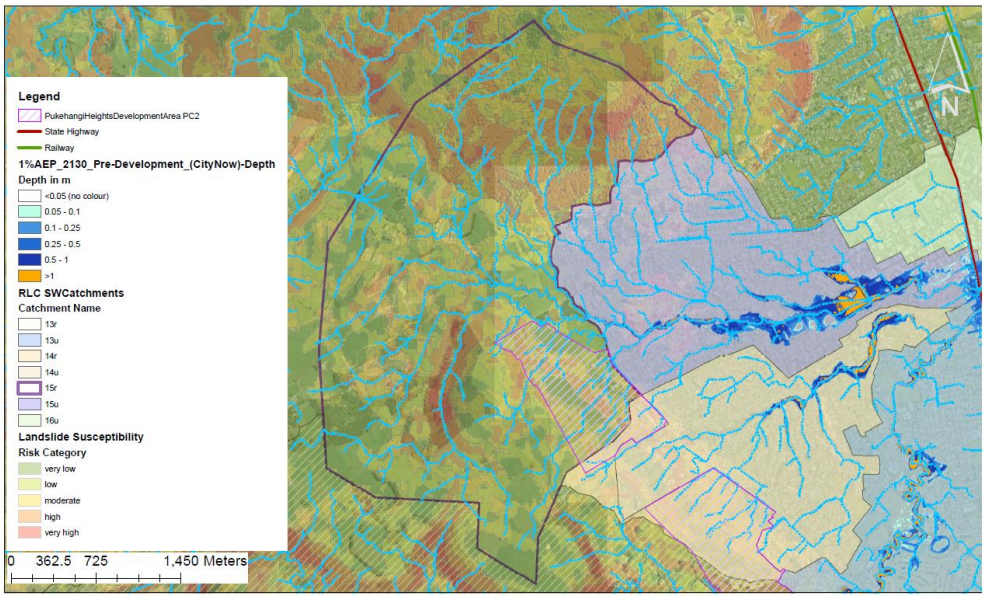


Figure 50: Mangakakahi– limited offside mitigation option





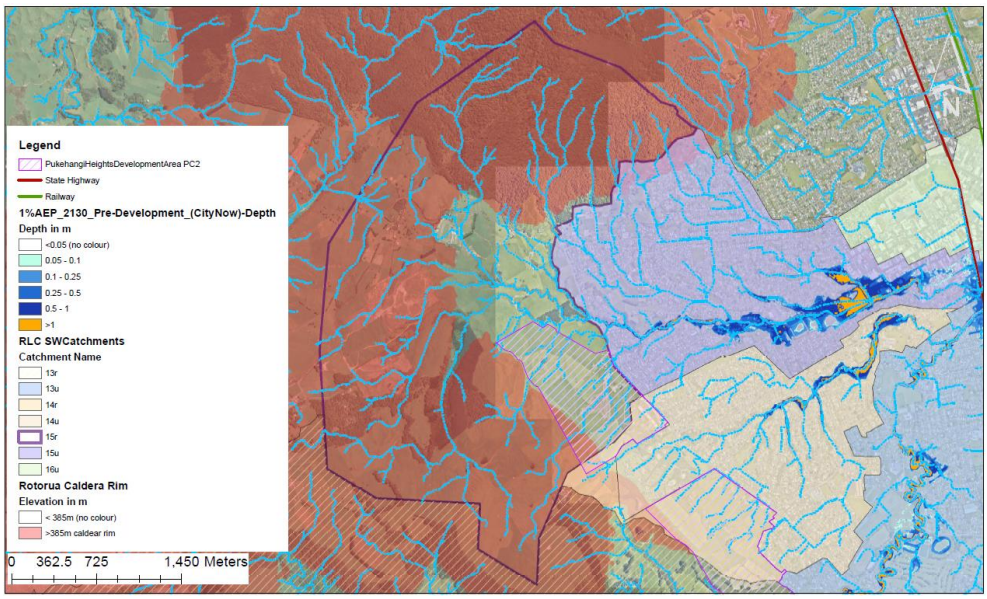


Figure 51: Mangakakahi– constraints/limited upstream mitigation opportunities