



# Karuah River and Stroud Flood Study Update

**Volume 2 – Flood Mapping**

Level 17, 141 Walker St  
North Sydney NSW 2060  
Australia

**Revision C**  
**June 2020**

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**Cover Photo:** Floodwaters flowing across Cowper Street, Stroud on the morning of 21<sup>st</sup> April 2015  
 (Source: Gloucester Advocate)

**Project No:** 301015-03792  
**Project:** Karuah River & Stroud Flood Study Update  
**Volume 2: Flood Mapping**

Rev	Description	Author	Review	Advisian Approval	Date
0	Draft for Internal Review	LC L Collins			31/01/2018
A	Draft Report – Issued for Council Review	LC L Collins	CRT C Thomas		5/02/2018
B	Draft Report for Public Exhibition	LC L Collins	CRT C Thomas	 Chris Thomas	23/10/2019
C	Final Report	LC L Collins	CRT C Thomas	 Chris Thomas	30/06/2020

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Figure 8-28: Probable Maximum Flood - ARR2016 General Flood Hazard at Allworth

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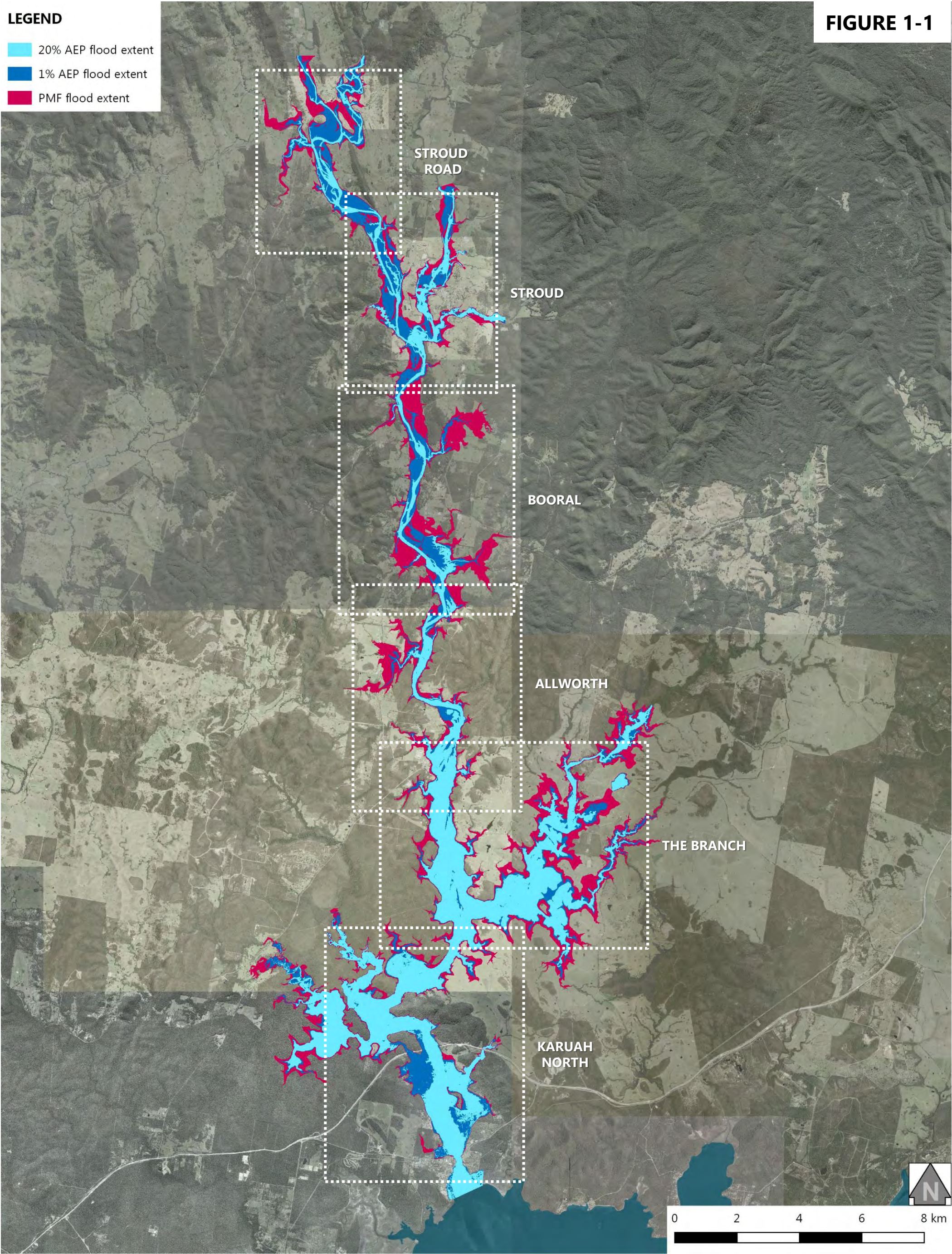
Figure 8-30: Probable Maximum Flood - ARR2016 General Flood Hazard at Karuah North



**LEGEND**

- 20% AEP flood extent
- 1% AEP flood extent
- PMF flood extent

**FIGURE 1-1**





LEGEND

Peak Flood Levels (mAHD)

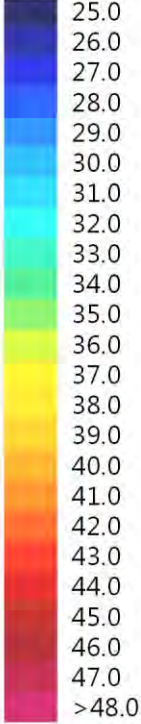
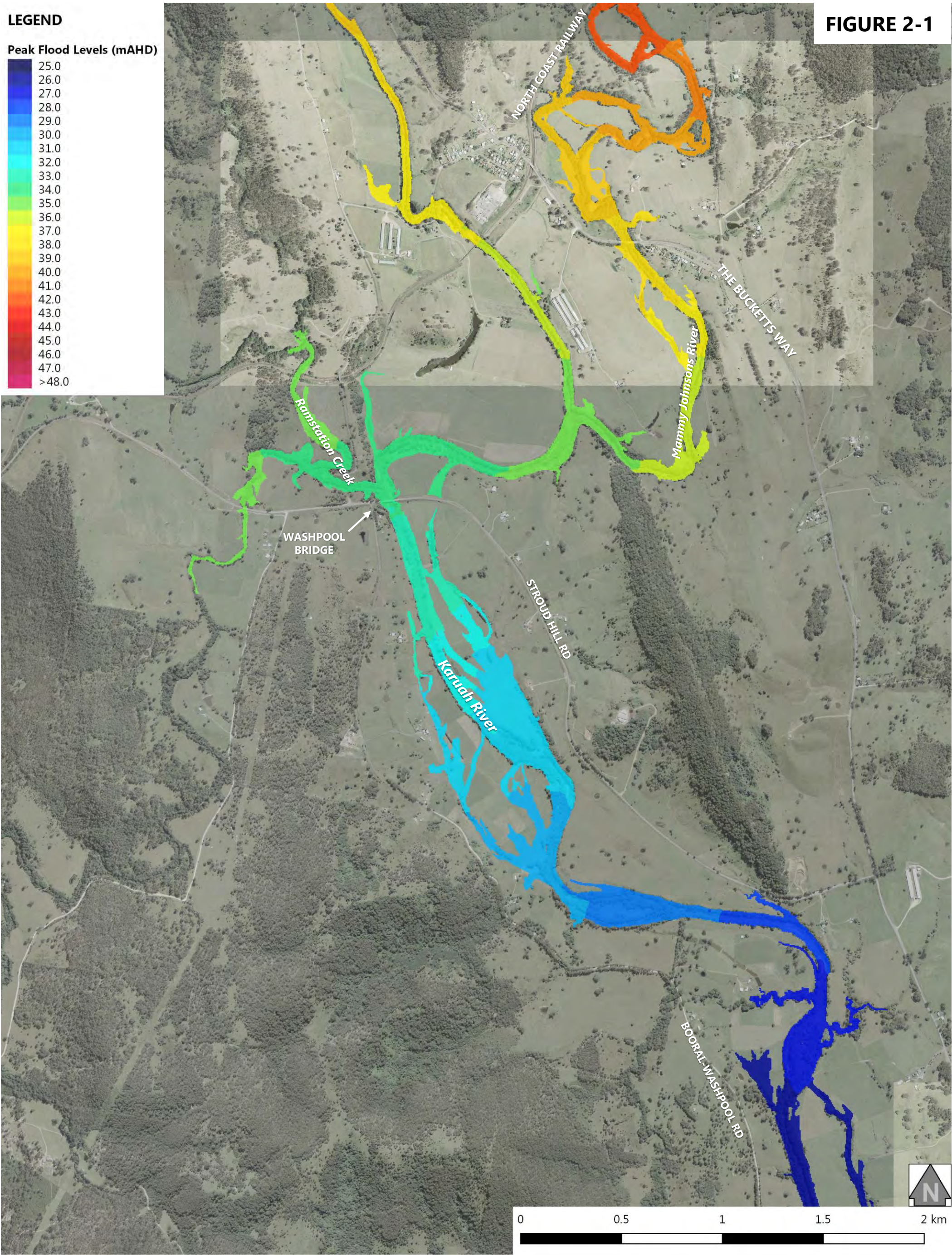


FIGURE 2-1





LEGEND

Peak Flood Levels (mAHD)

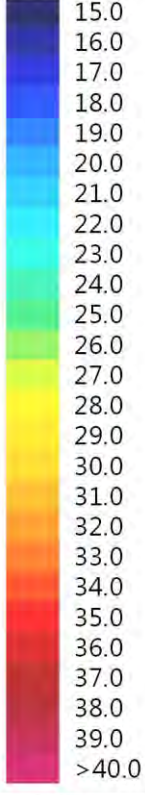
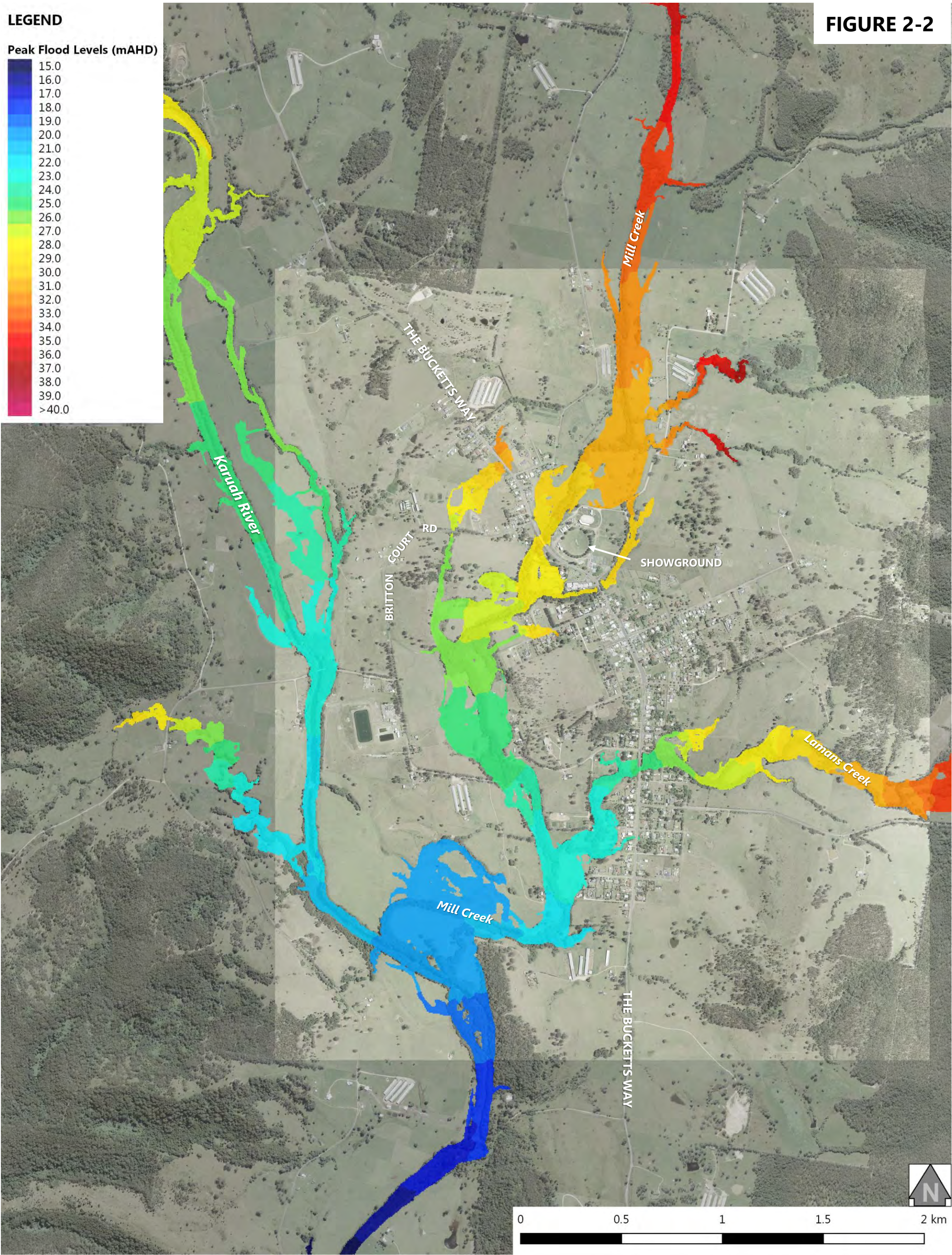


FIGURE 2-2





LEGEND

Peak Flood Levels (mAHD)

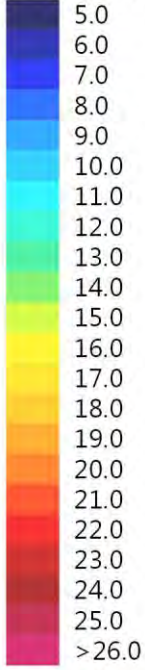
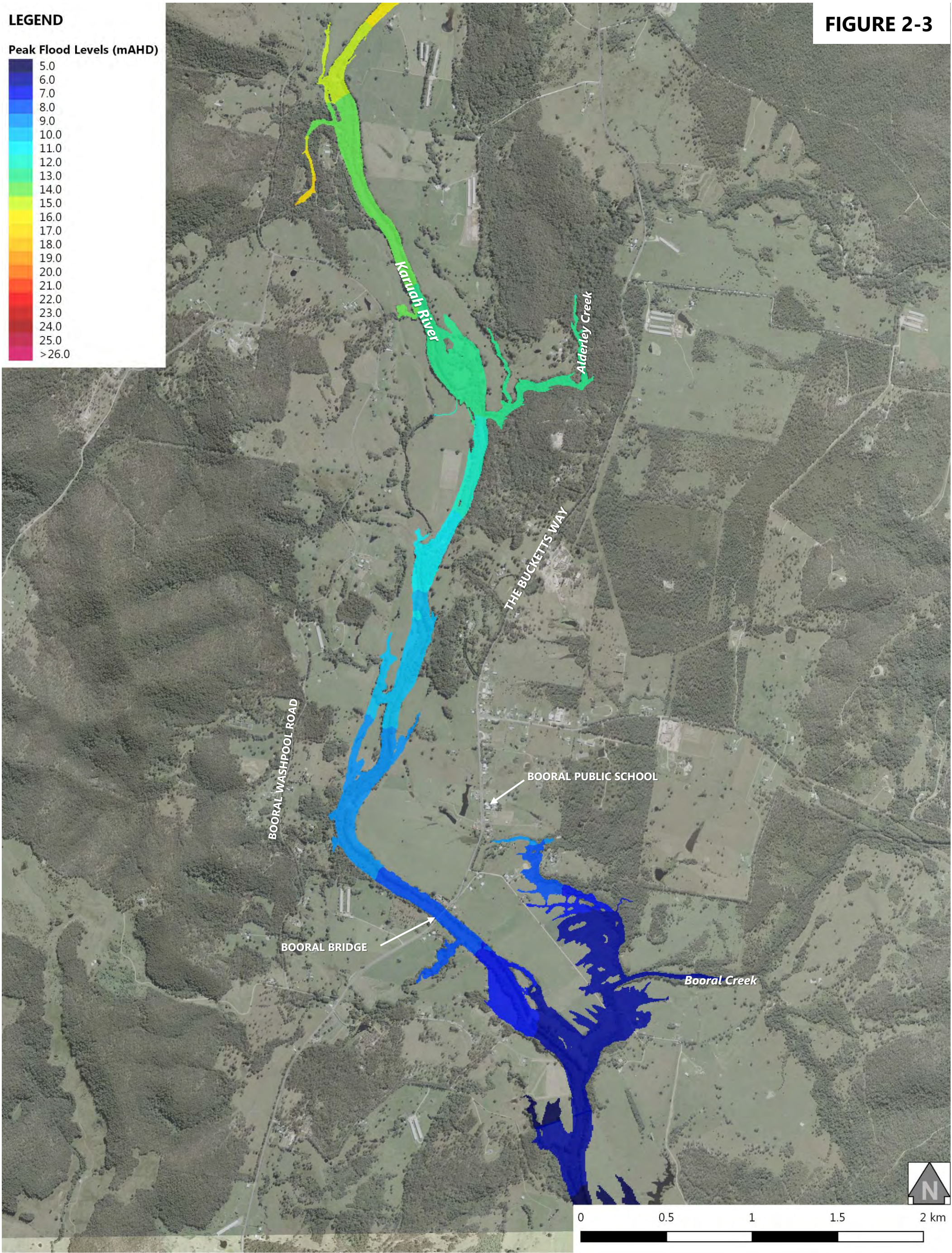


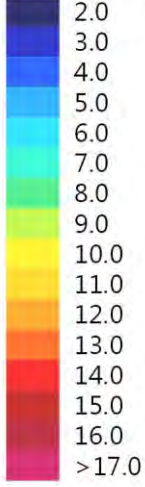
FIGURE 2-3



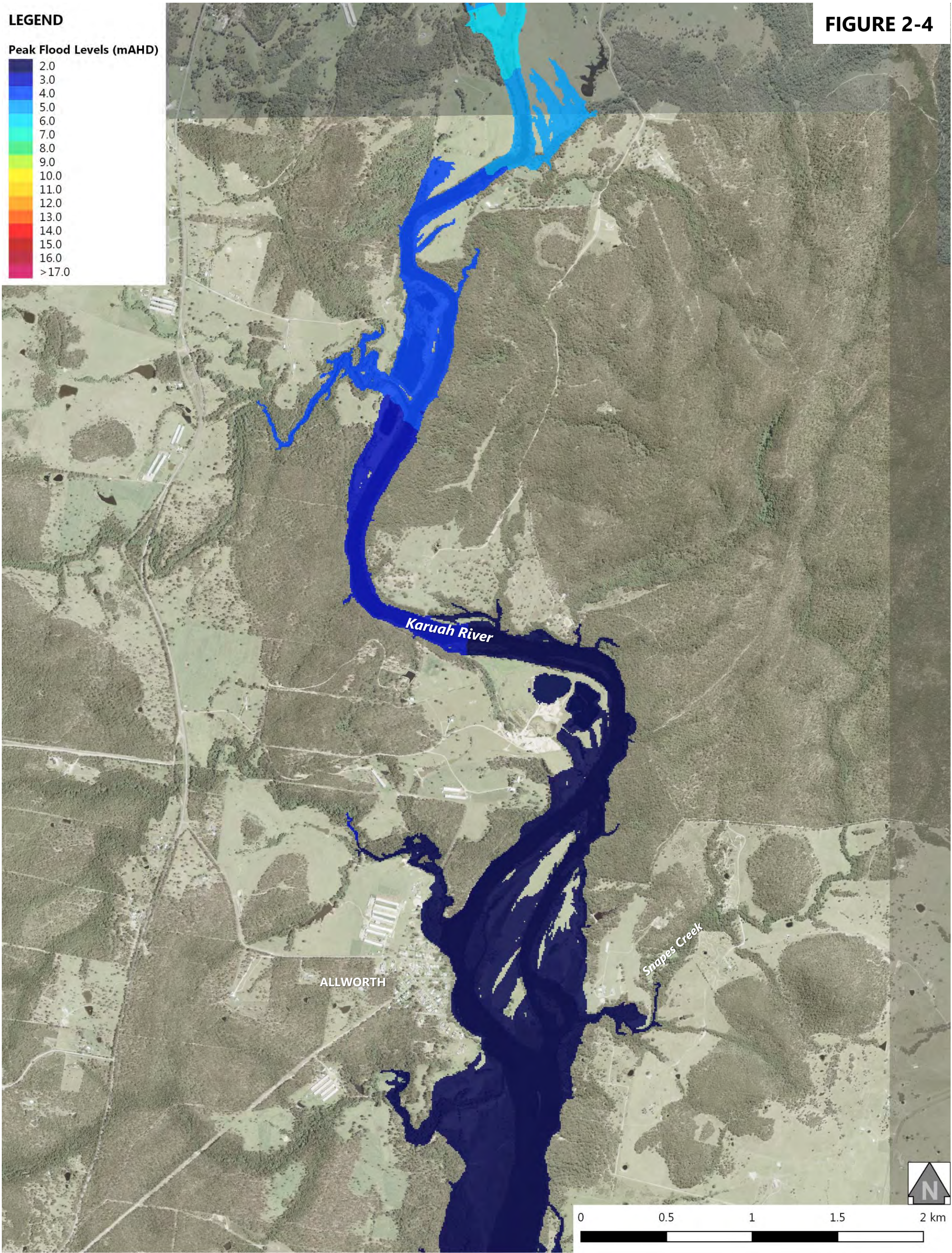


**LEGEND**

Peak Flood Levels (mAHD)

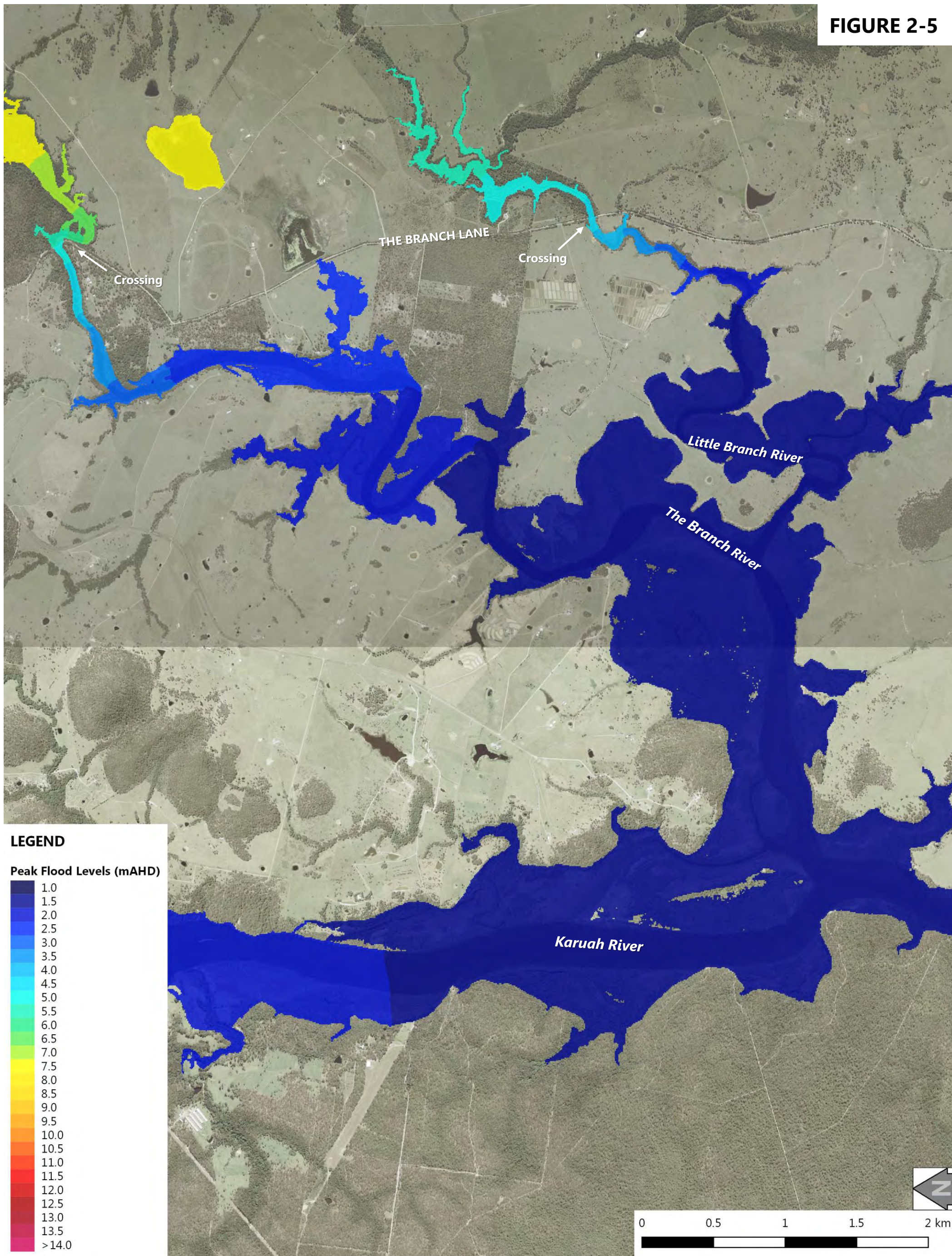


**FIGURE 2-4**





**FIGURE 2-5**



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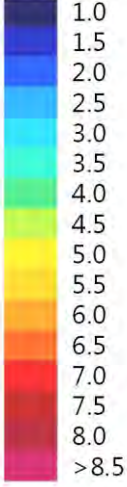
301015-03792 – Karuah River and Stroud Flood Study Update – Volume 2  
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**20% AEP DESIGN FLOOD EVENT  
PEAK FLOOD LEVELS AT THE BRANCH**

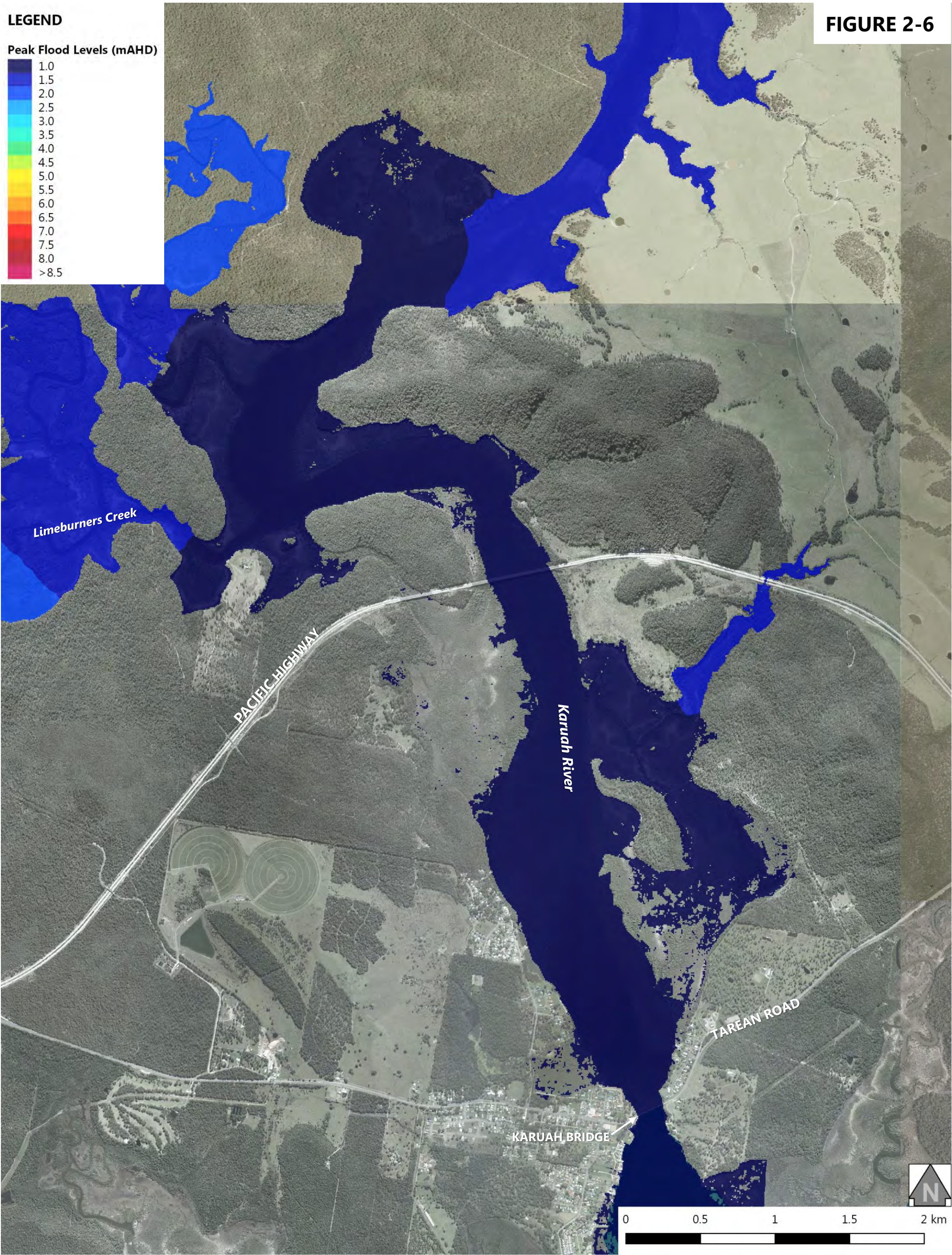


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 2-6**





LEGEND

Peak Flood Depth (m)

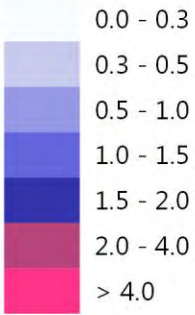
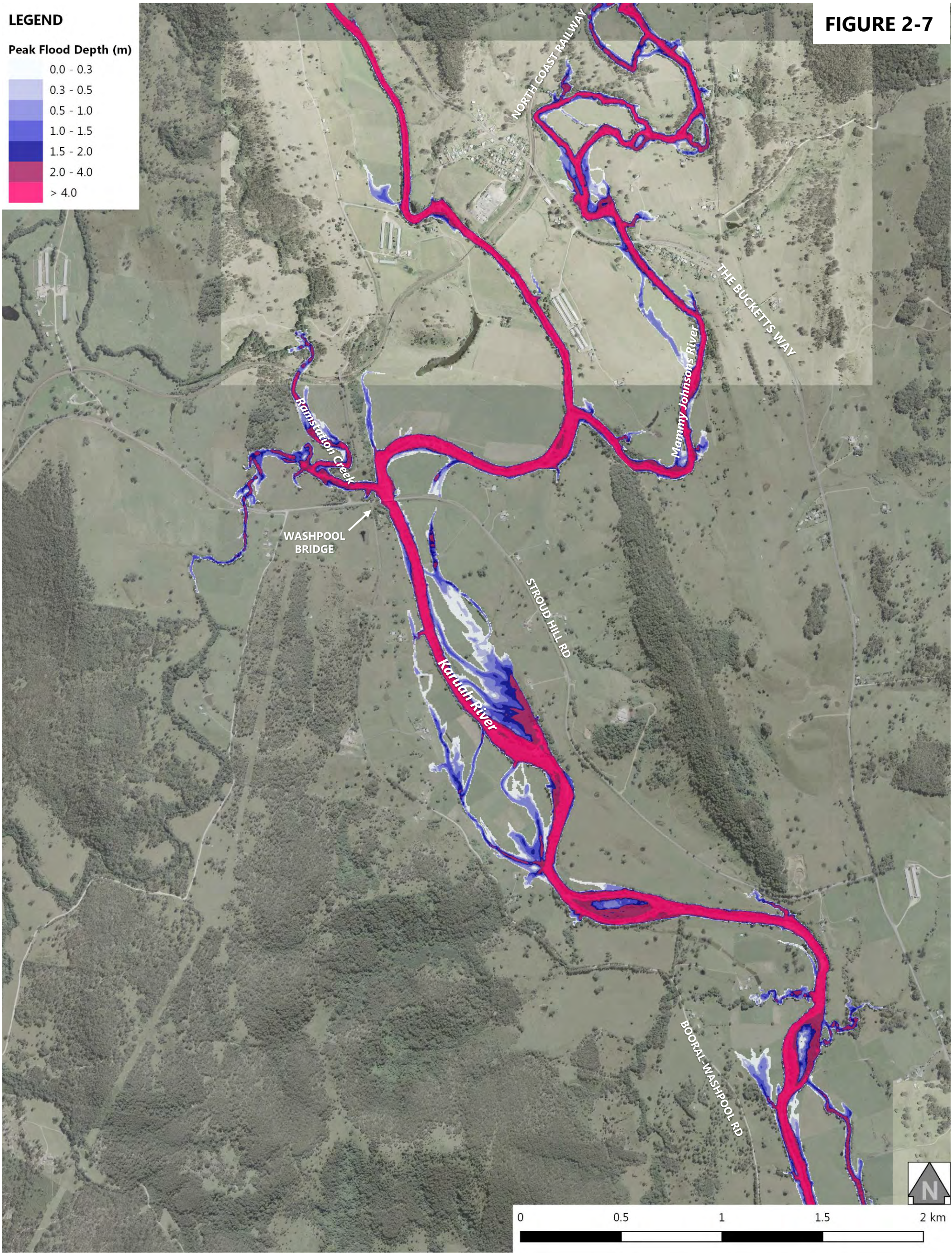


FIGURE 2-7





LEGEND

Peak Flood Depth (m)

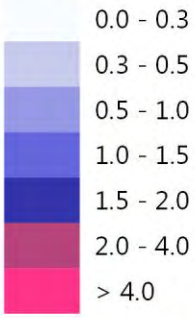
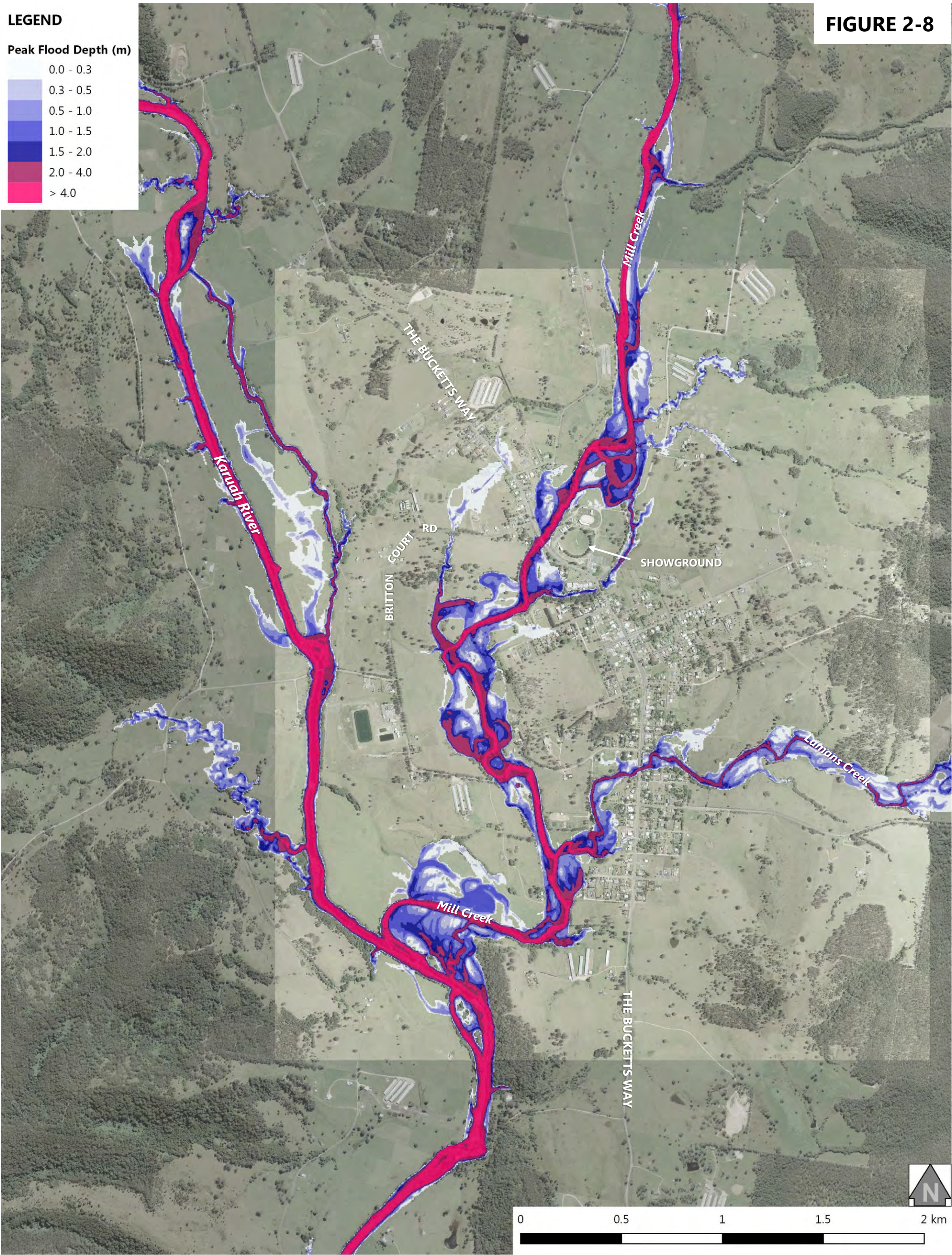


FIGURE 2-8





LEGEND

Peak Flood Depth (m)

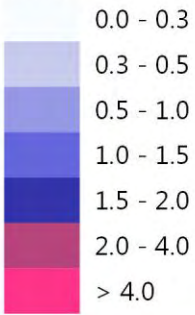
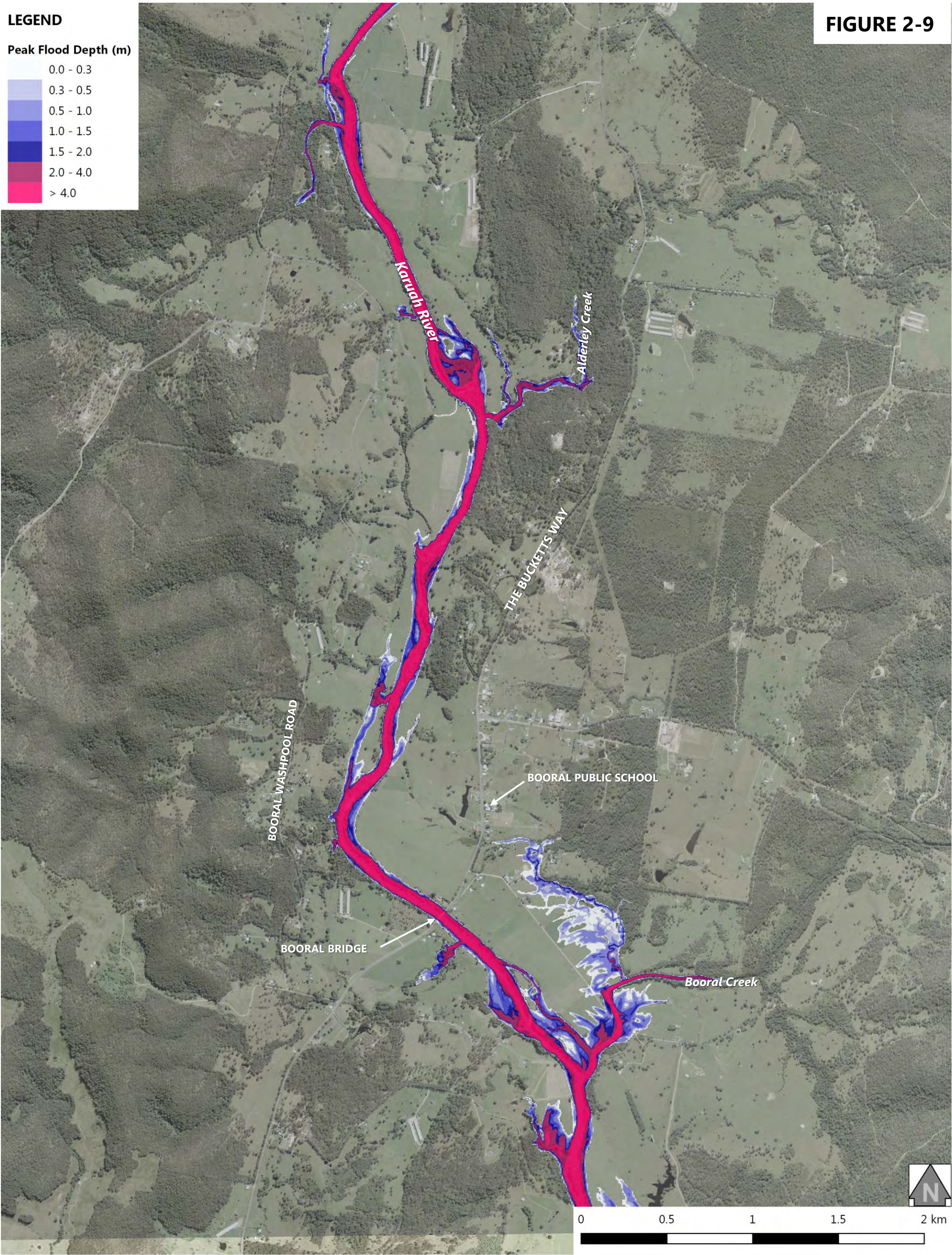


FIGURE 2-9





LEGEND

Peak Flood Depth (m)

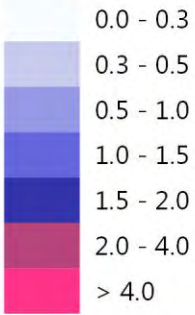
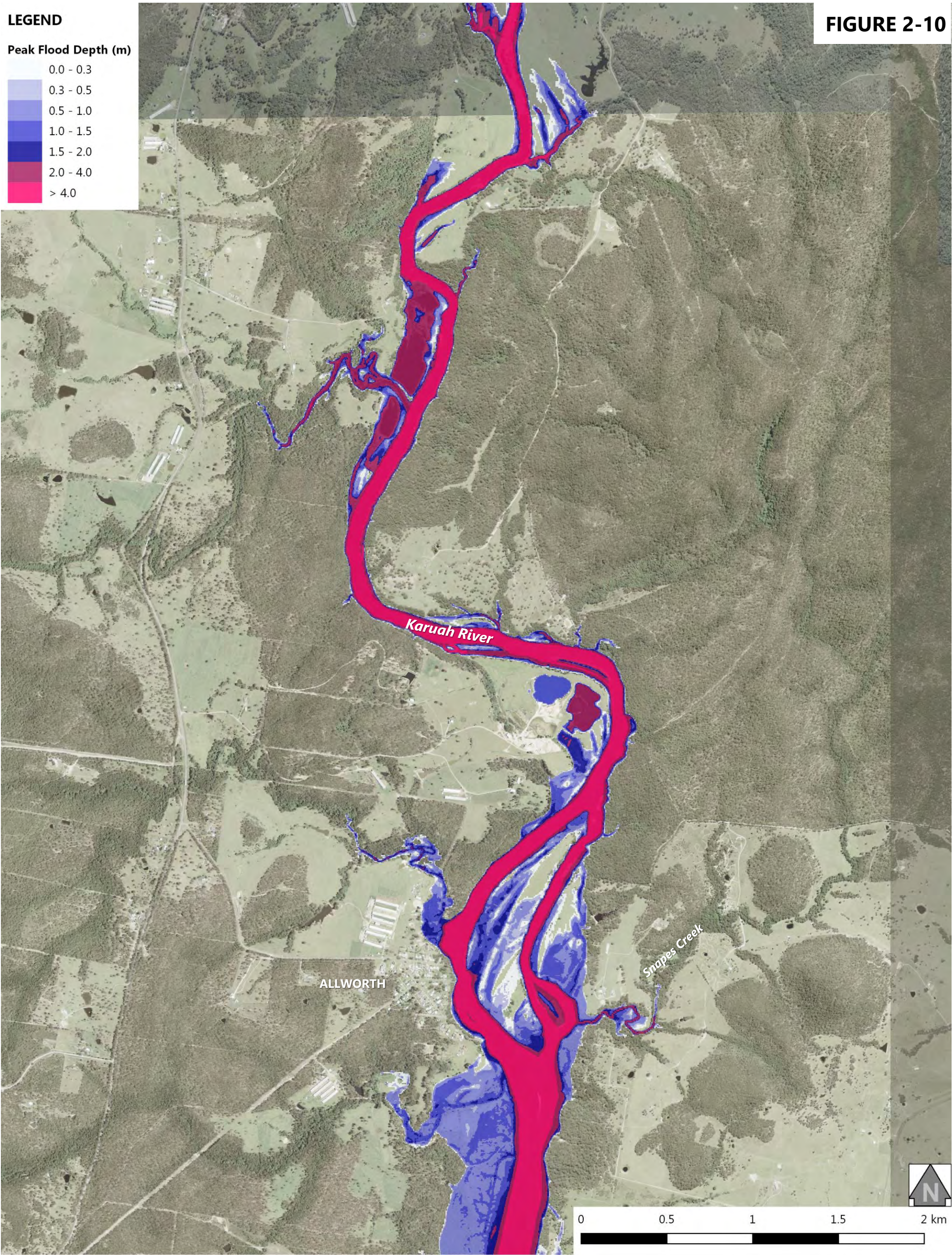
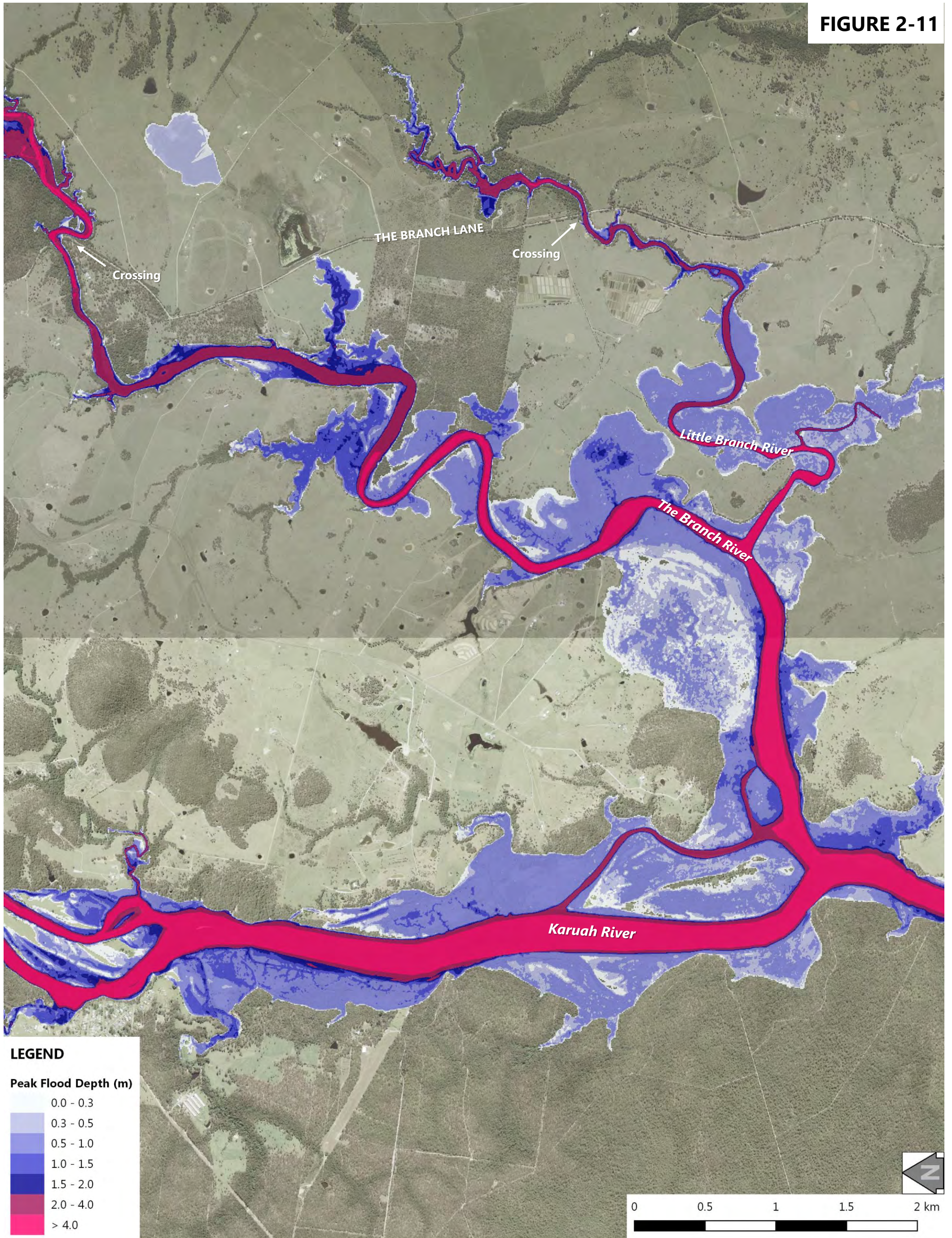


FIGURE 2-10





**FIGURE 2-11**



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Flood Mapping\_A3\_Portrait\_20%AEP\_RevA.pdf

**20% AEP DESIGN FLOOD EVENT  
PEAK FLOOD DEPTH AT THE BRANCH**



LEGEND

Peak Flood Depth (m)

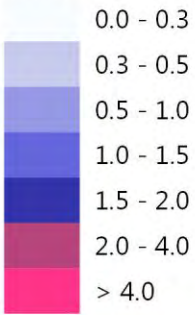
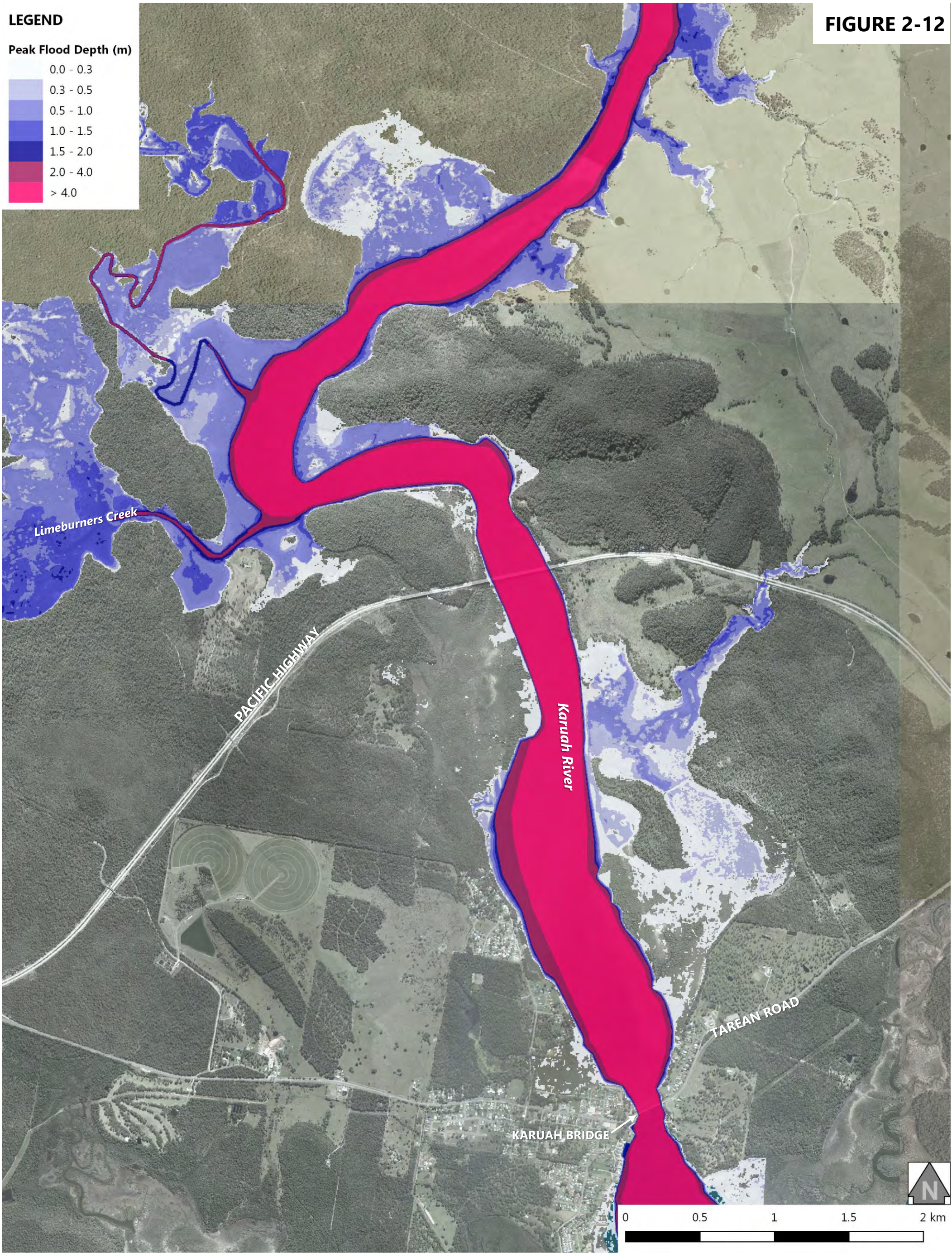


FIGURE 2-12





LEGEND

Peak Flood Velocity (m/s)

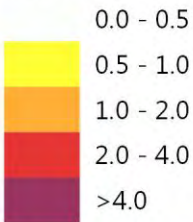
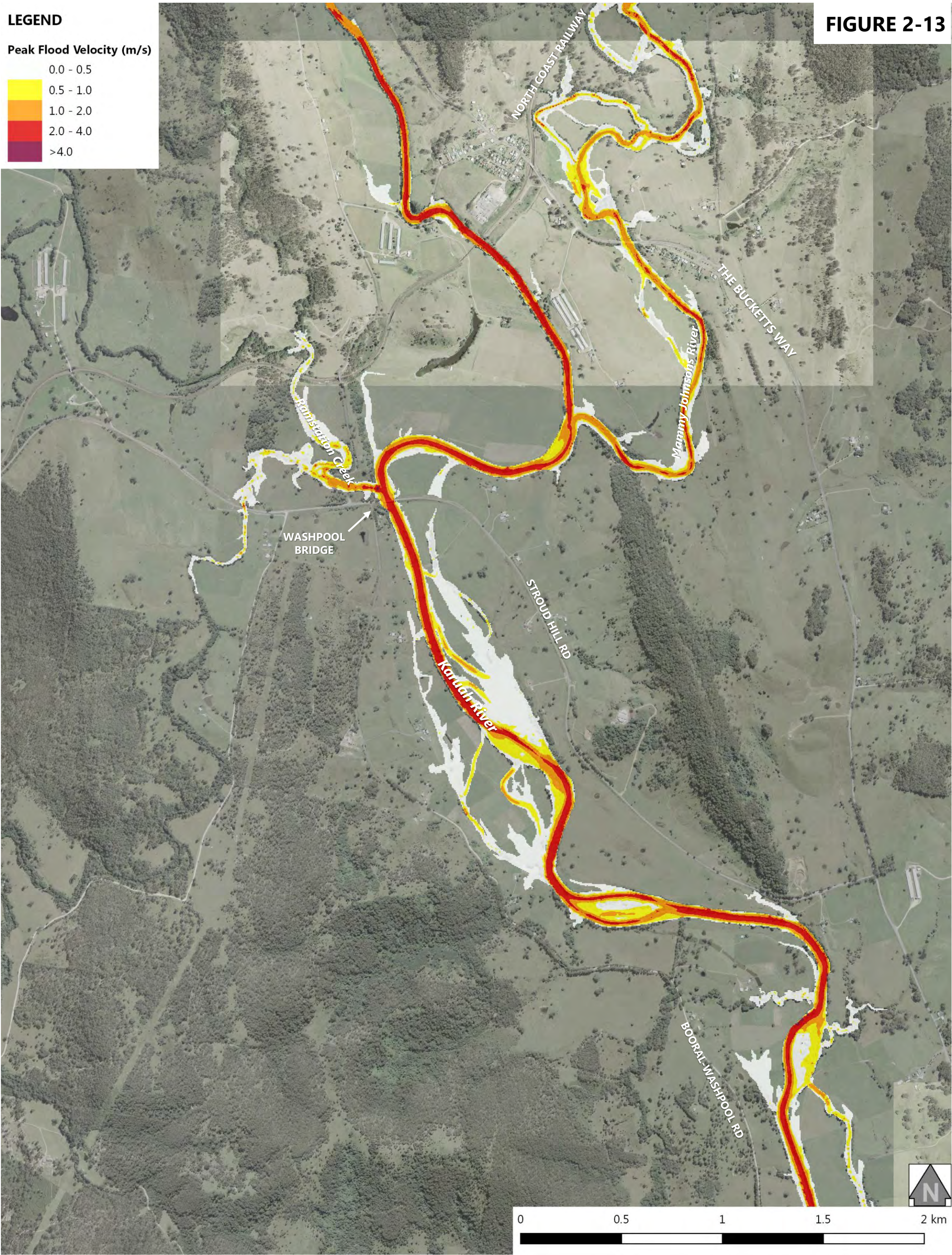


FIGURE 2-13





LEGEND

Peak Flood Velocity (m/s)

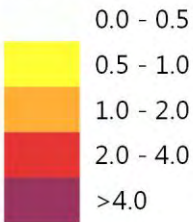
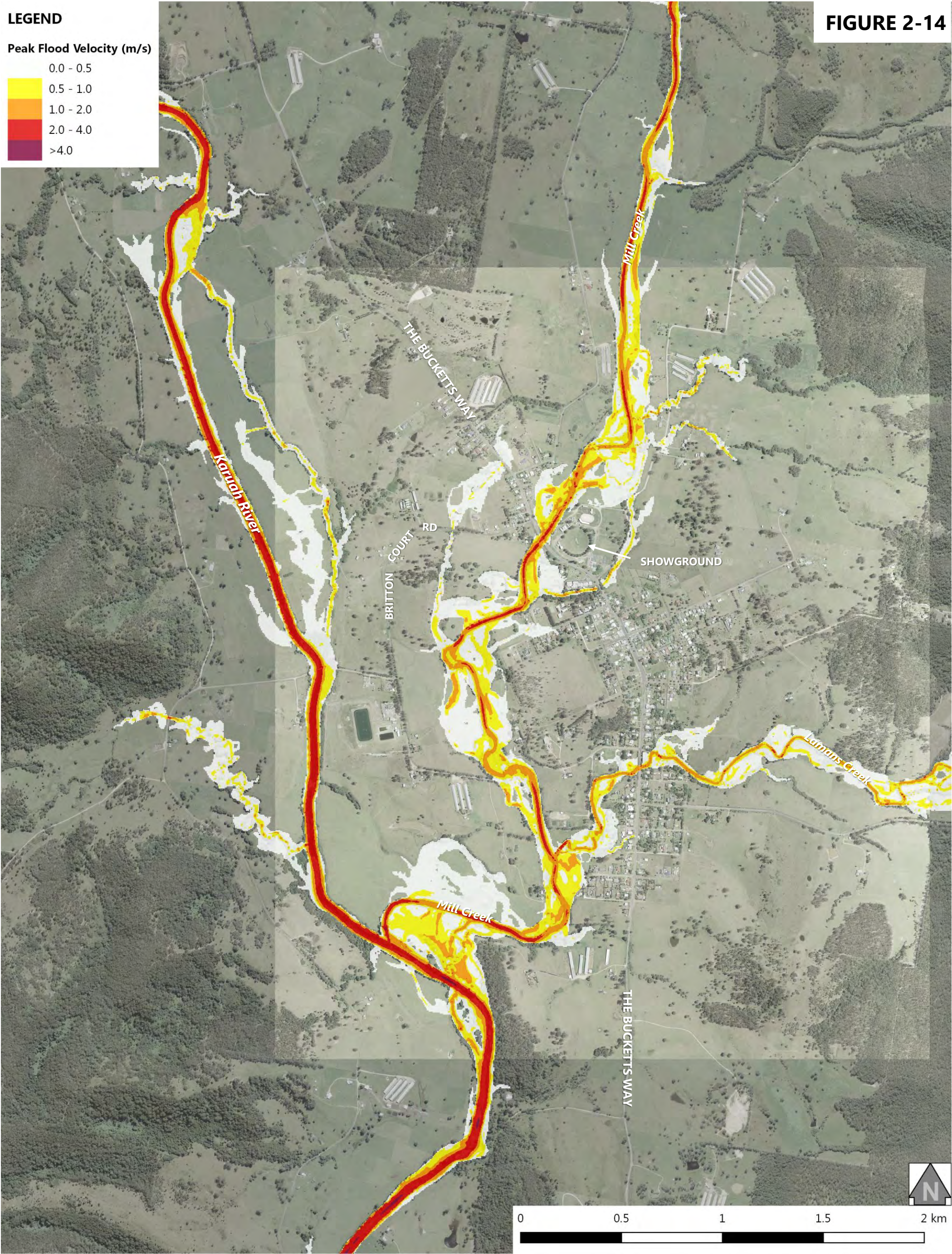


FIGURE 2-14





LEGEND

Peak Flood Velocity (m/s)

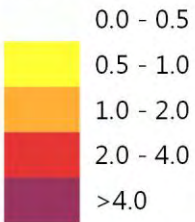
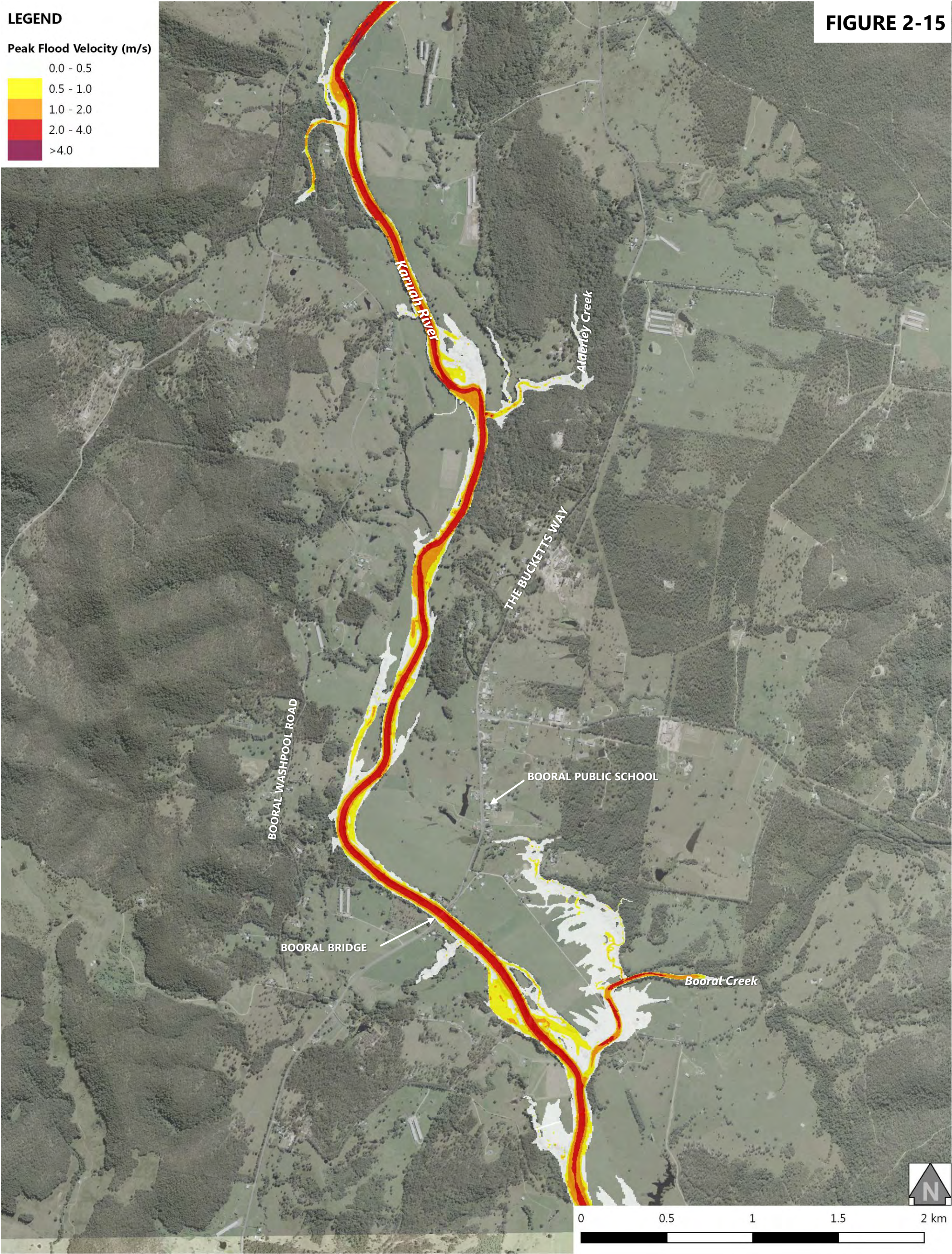


FIGURE 2-15





LEGEND

Peak Flood Velocity (m/s)

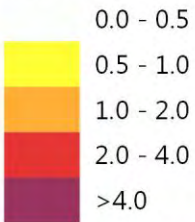
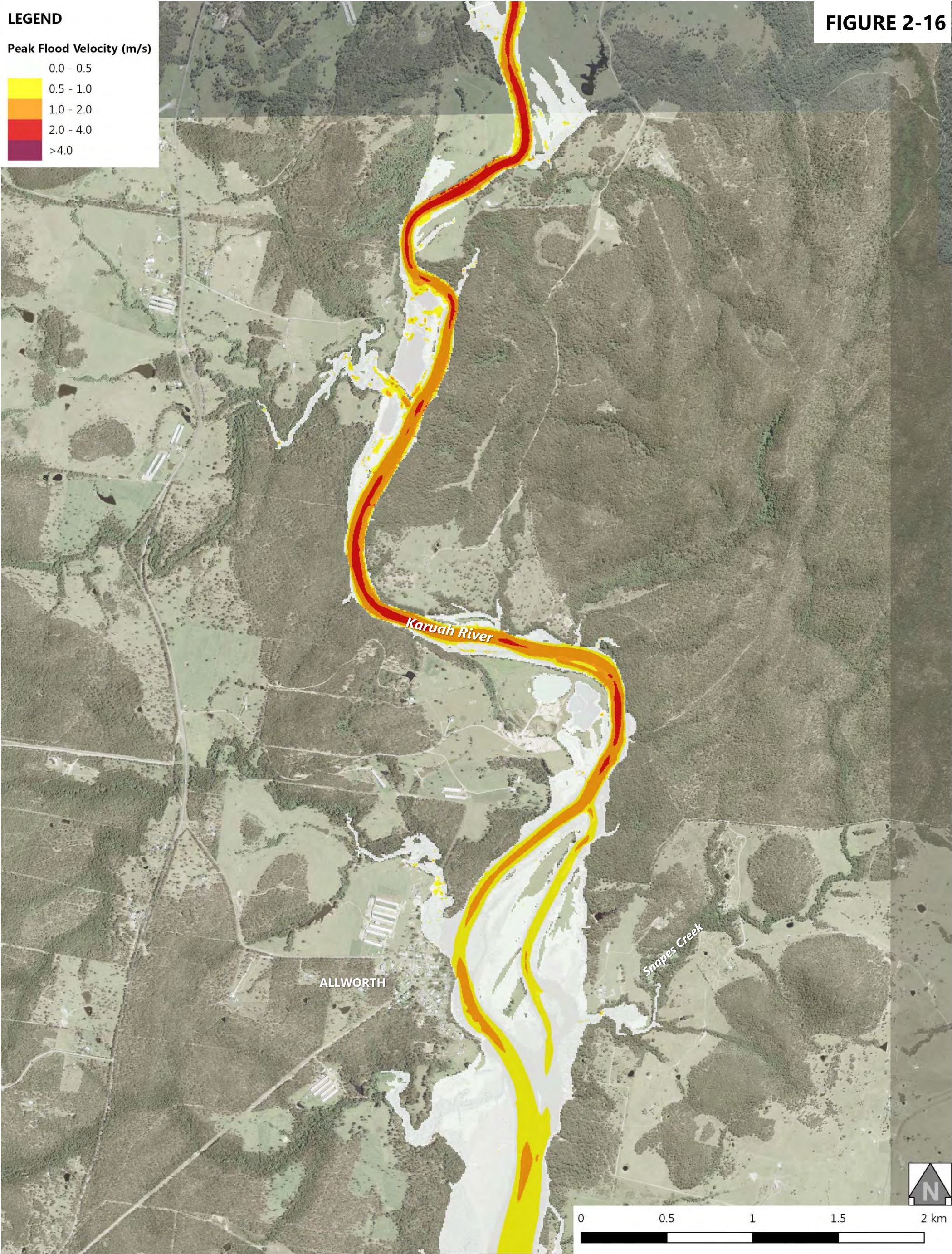


FIGURE 2-16





**FIGURE 2-17**



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Flood Mapping\_A3\_Portrait\_20%AEP\_RevA.pdf

**20% AEP DESIGN FLOOD EVENT  
PEAK FLOOD VELOCITY AT THE BRANCH**



LEGEND

Peak Flood Velocity (m/s)

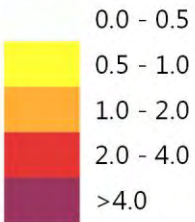


FIGURE 2-18



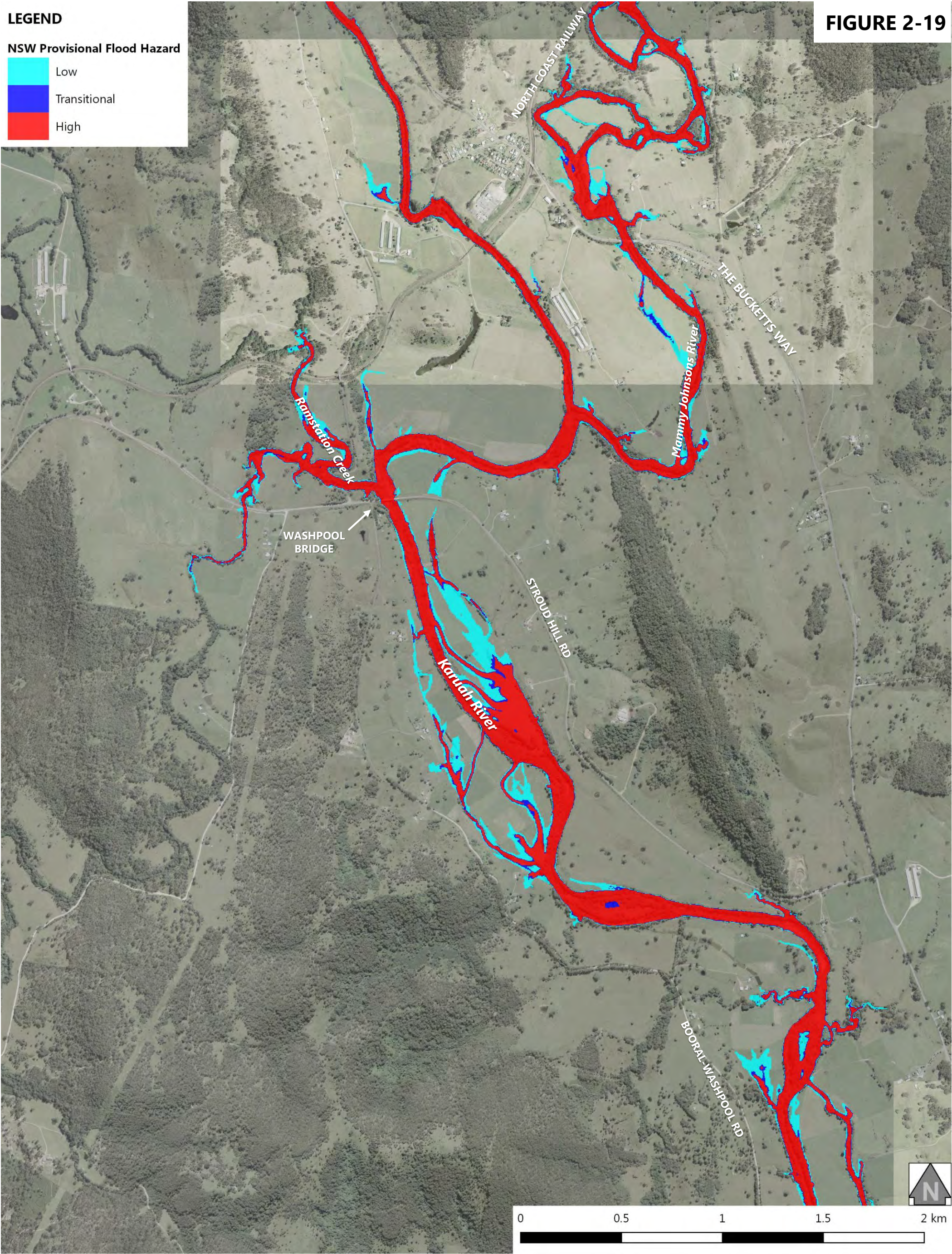


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 2-19



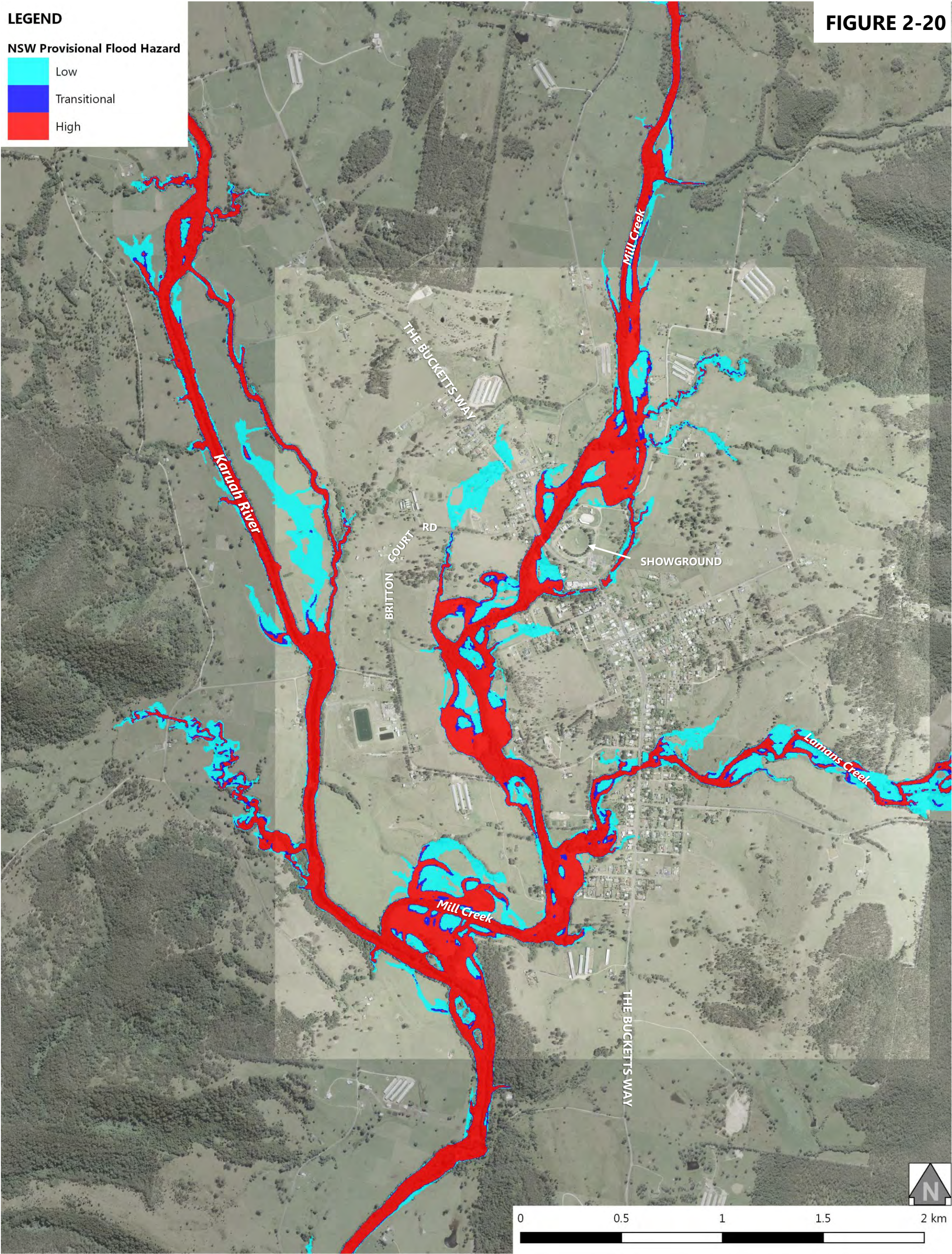


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 2-20



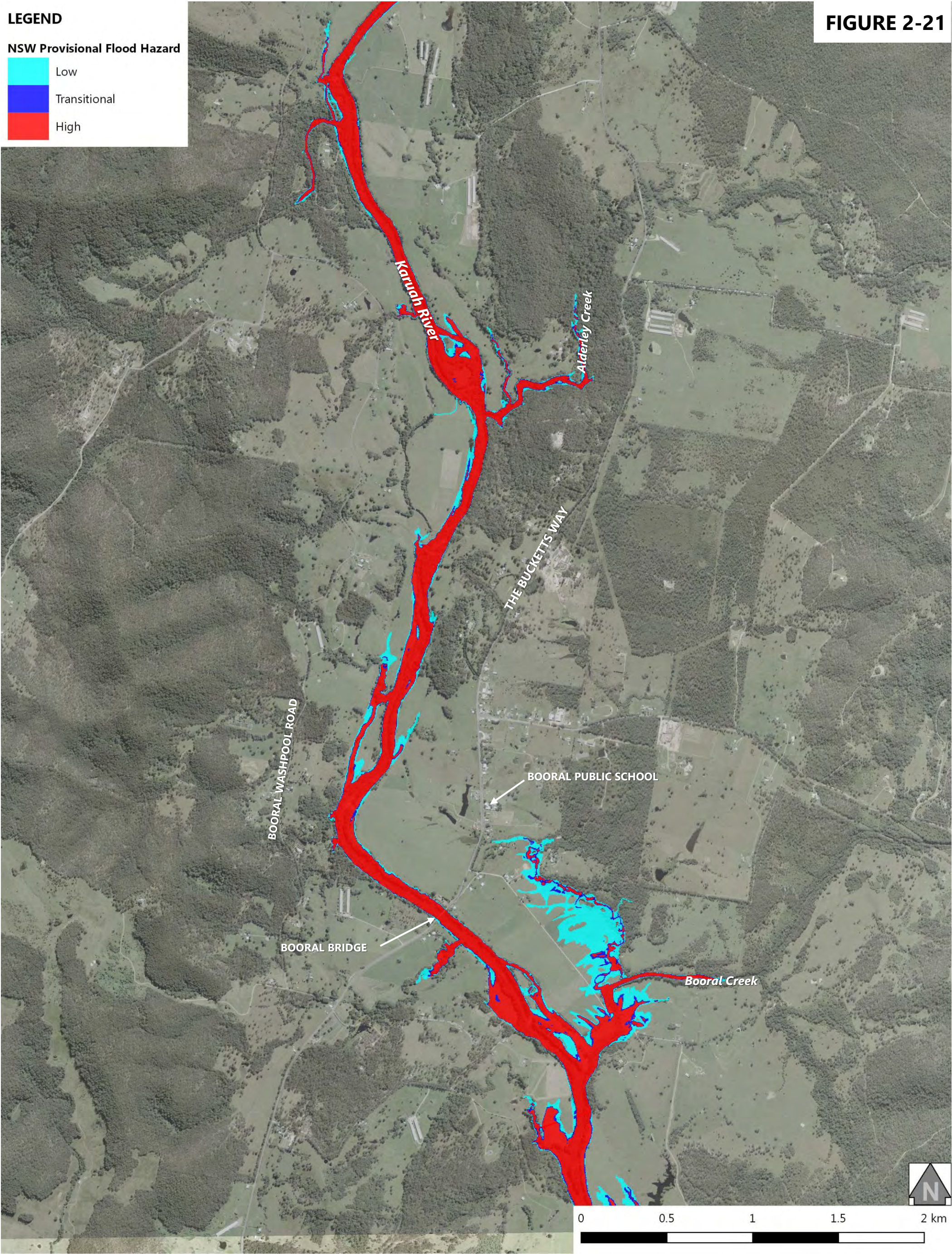


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 2-21





LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 2-22

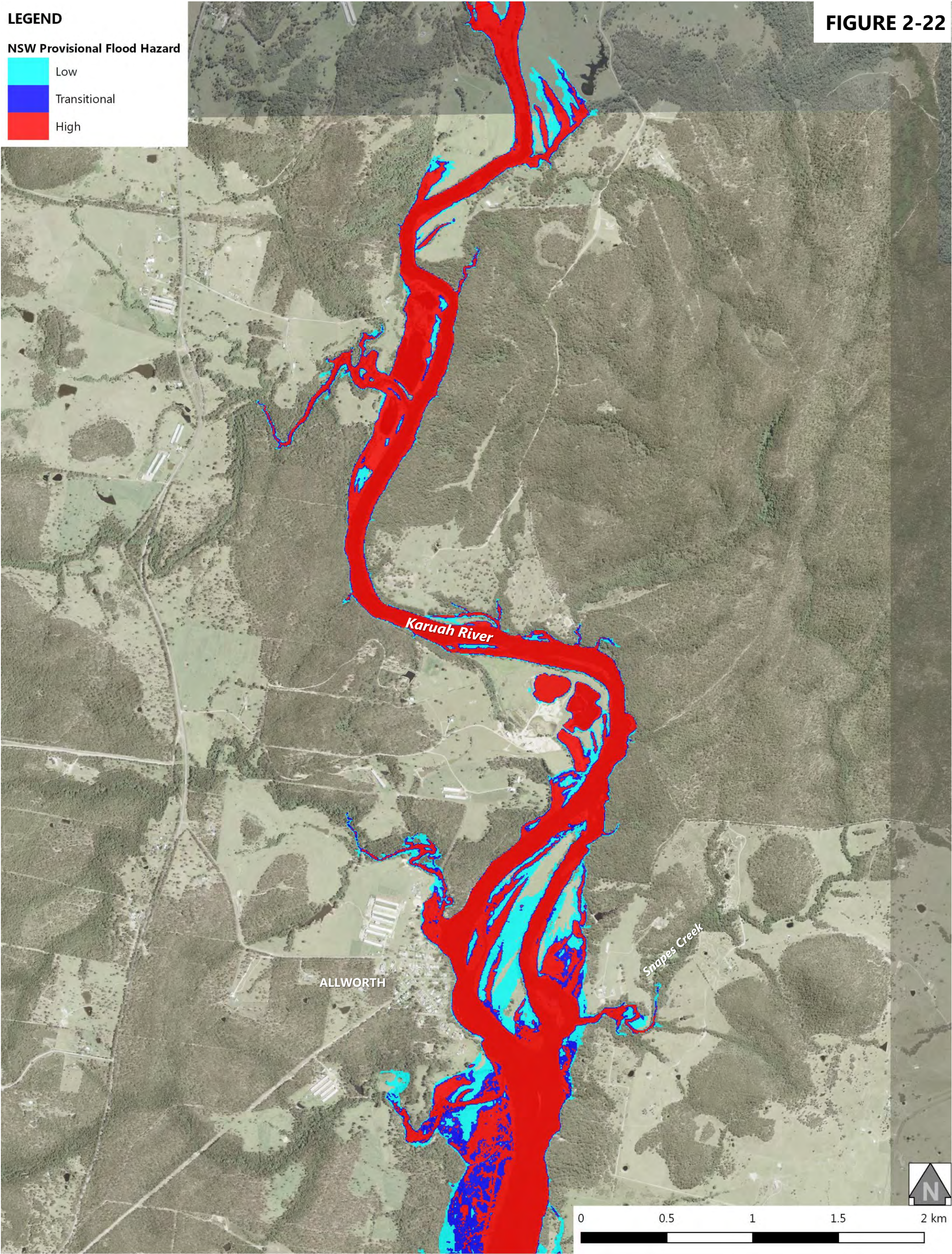
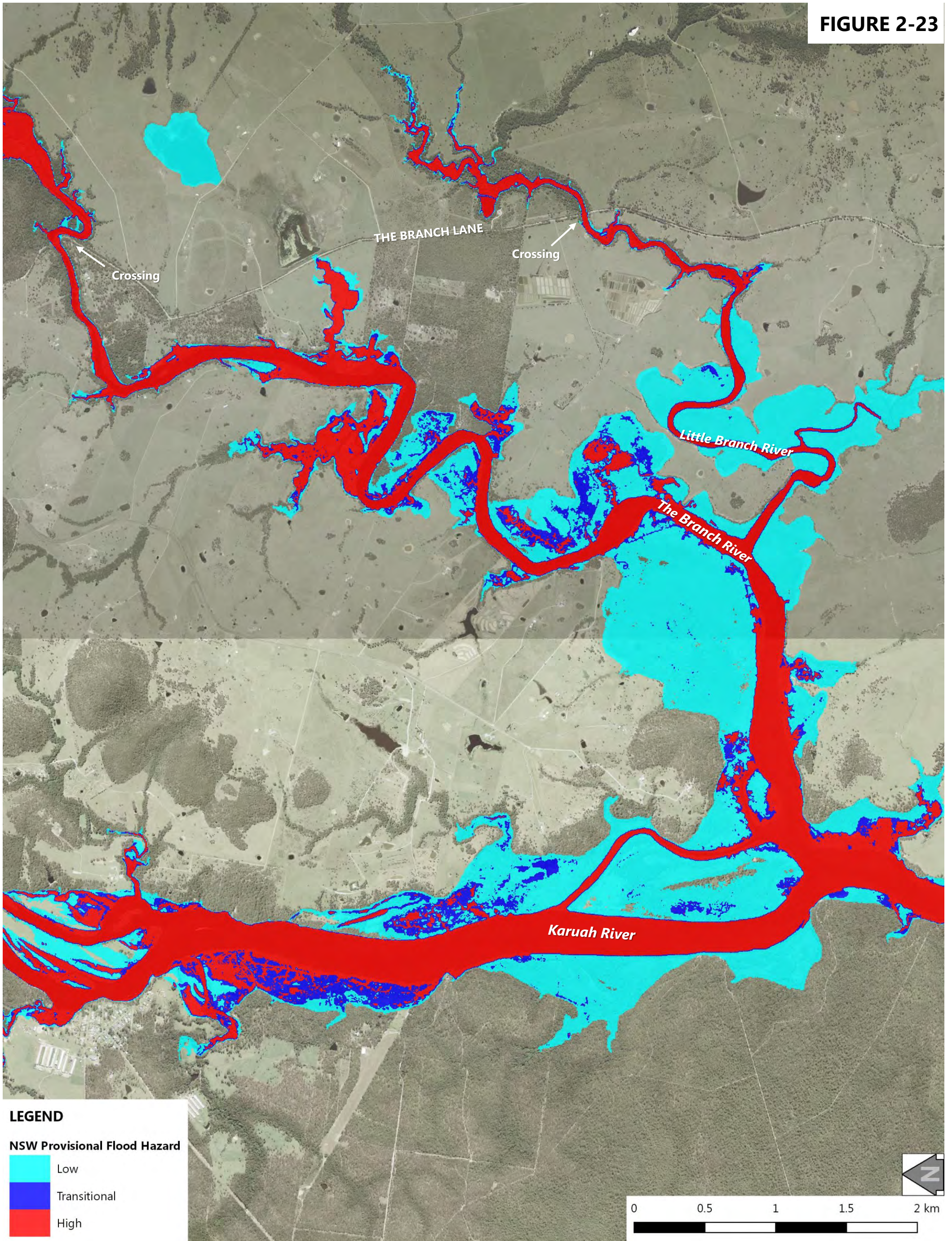




FIGURE 2-23



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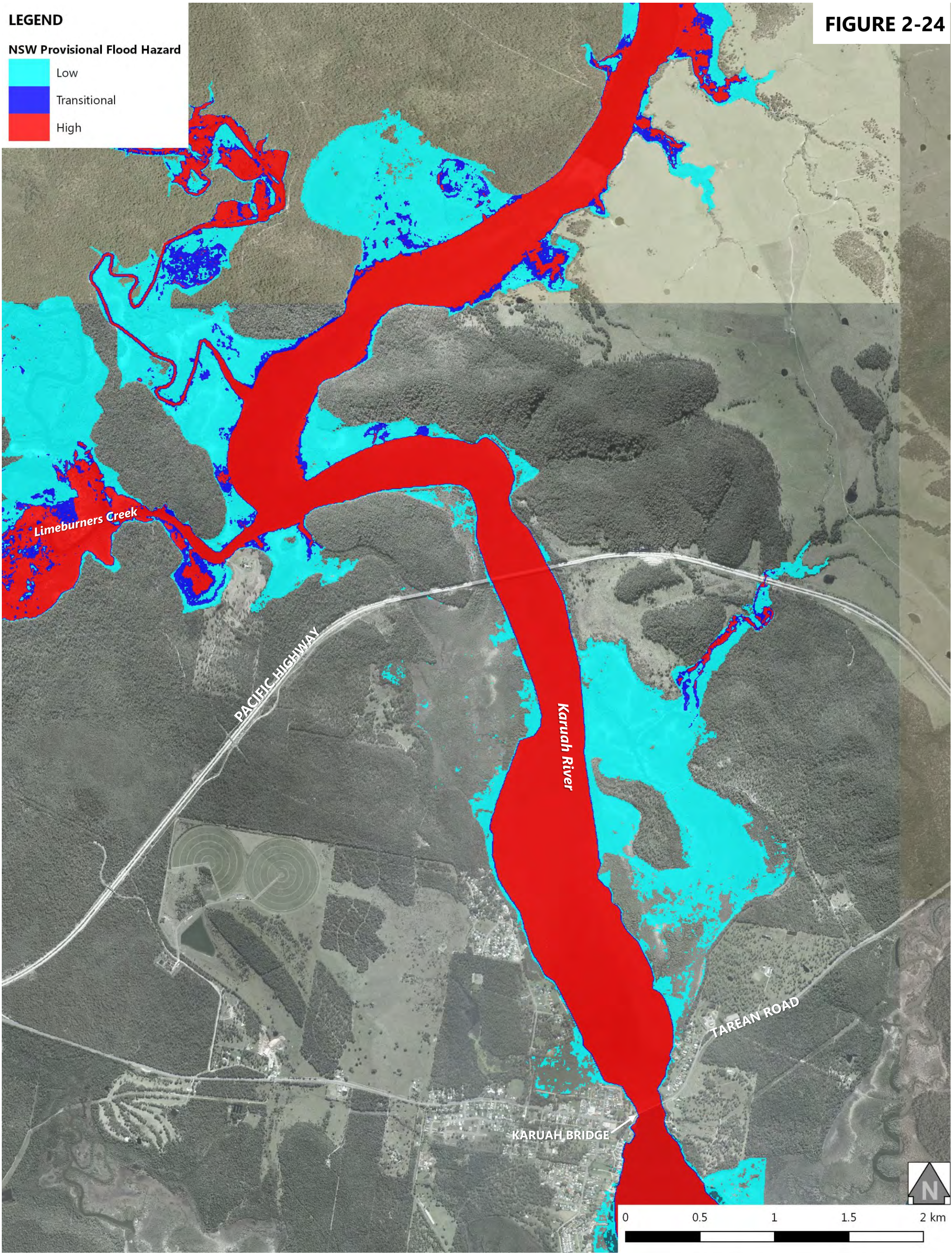


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 2-24



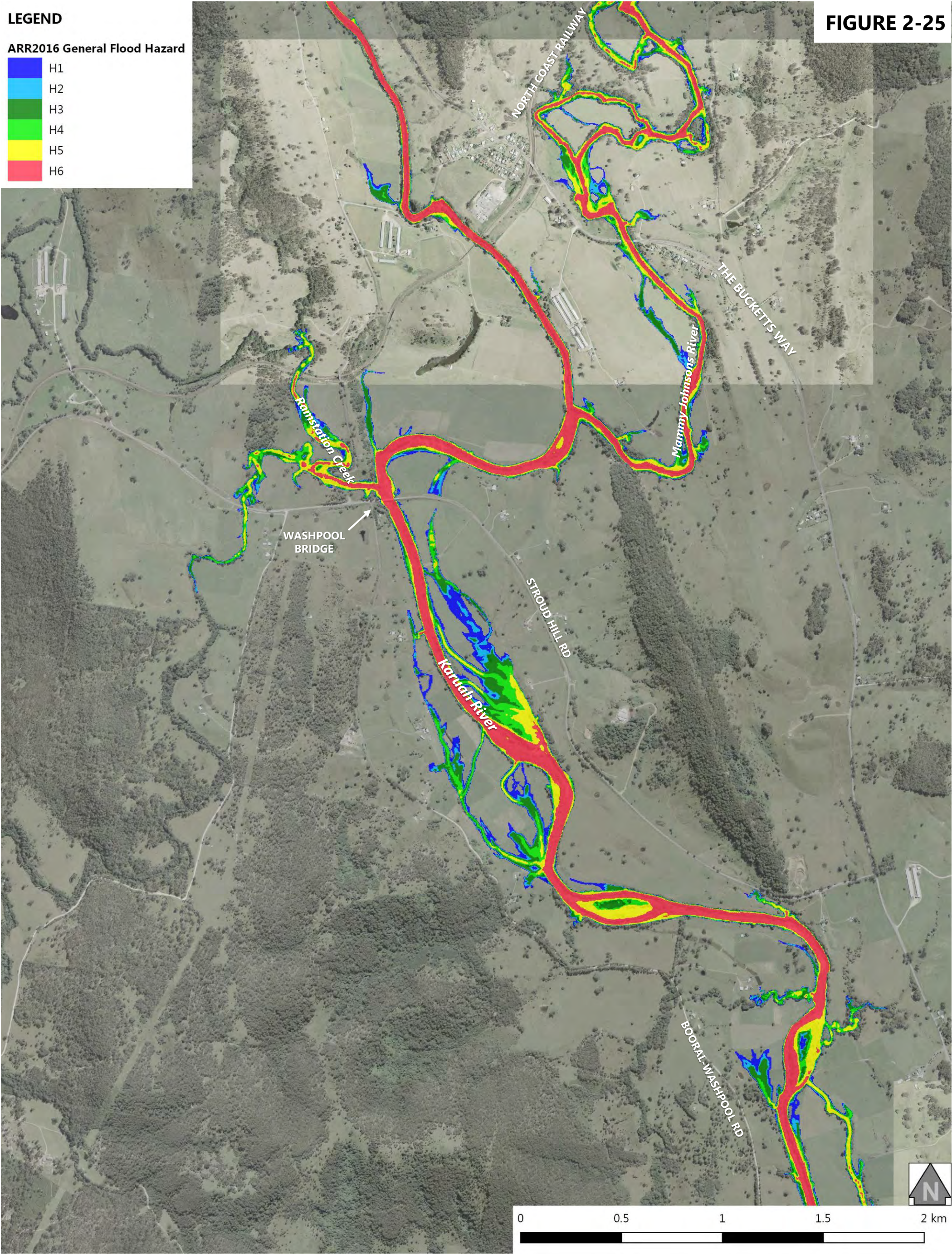


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 2-25



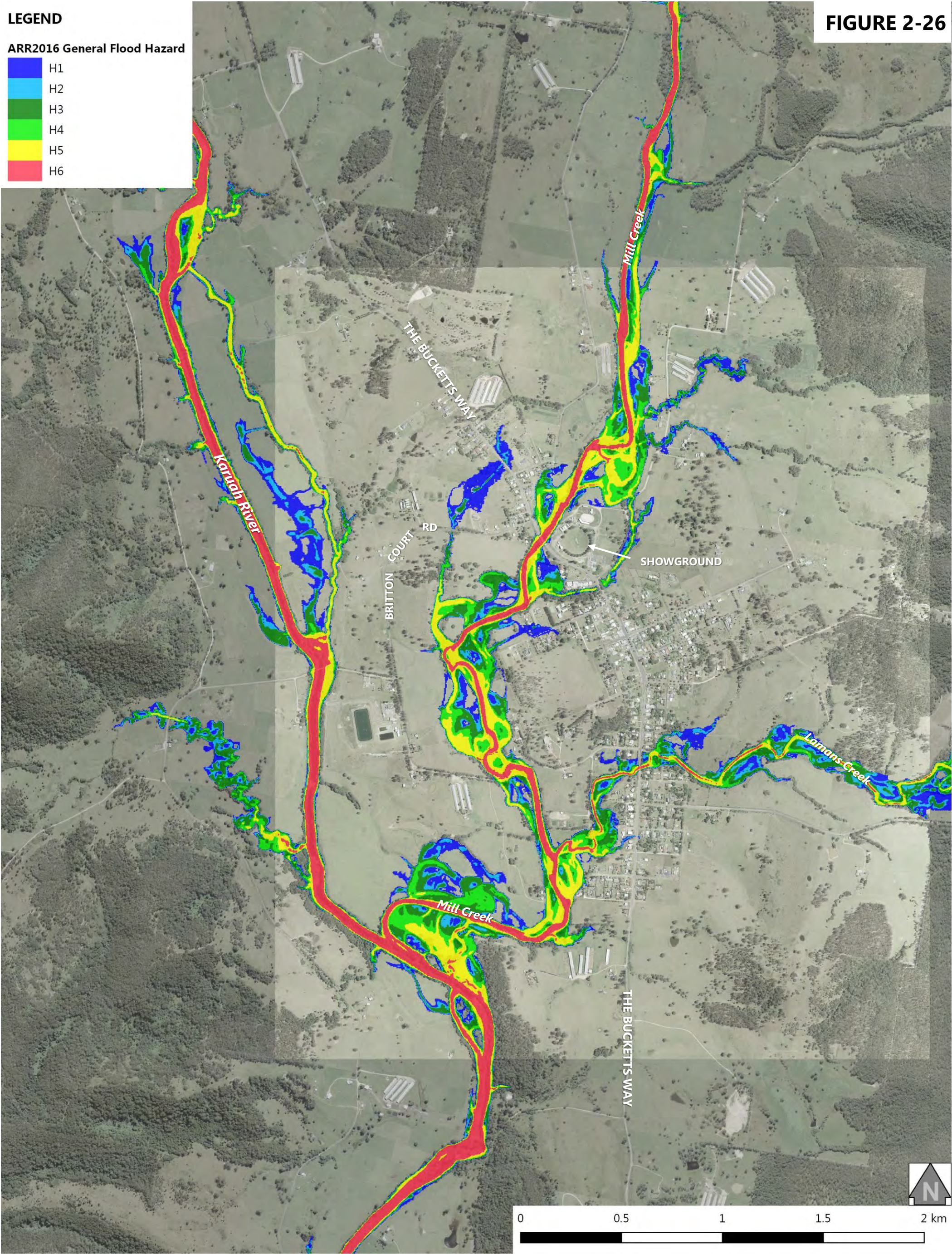


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 2-26



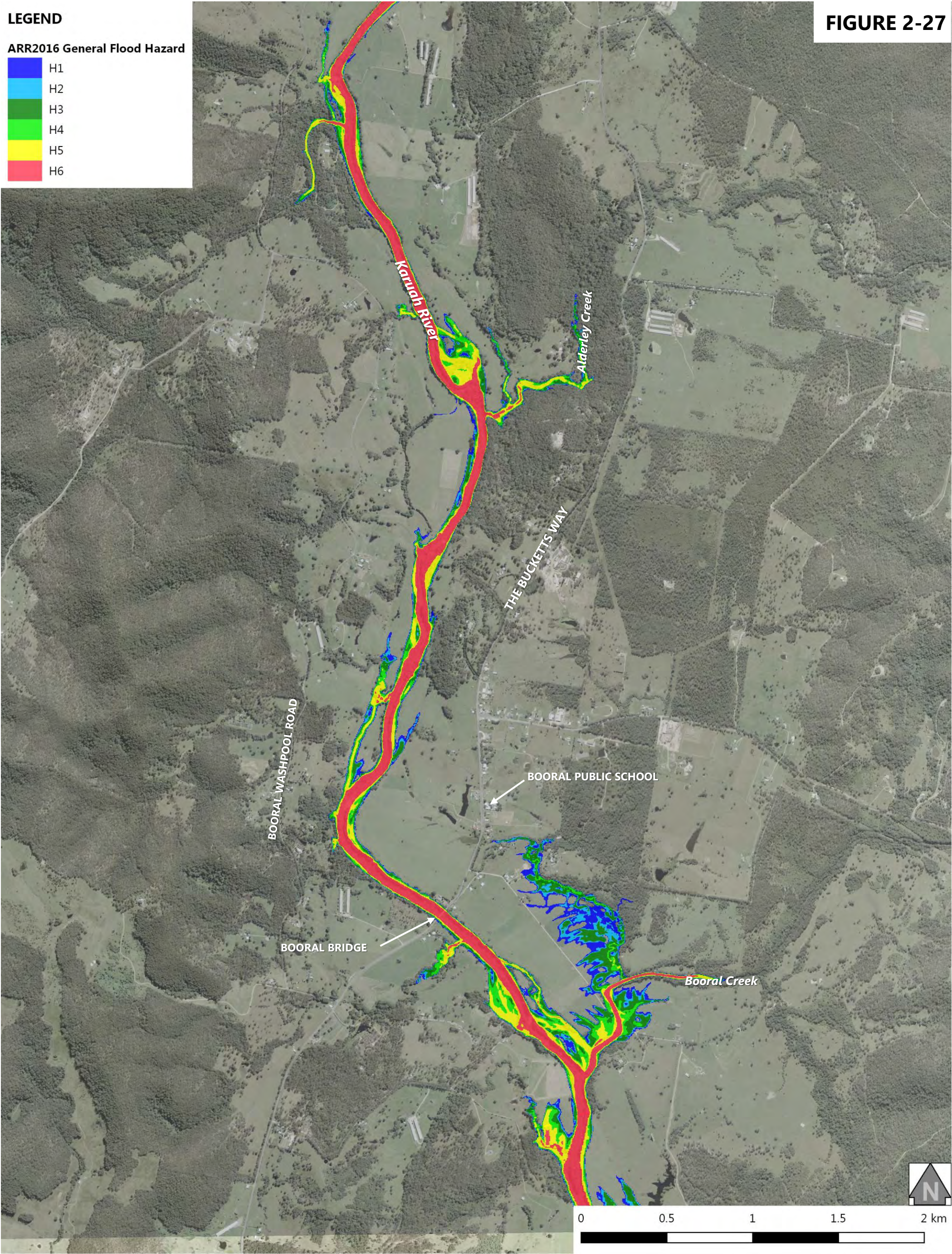


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 2-27



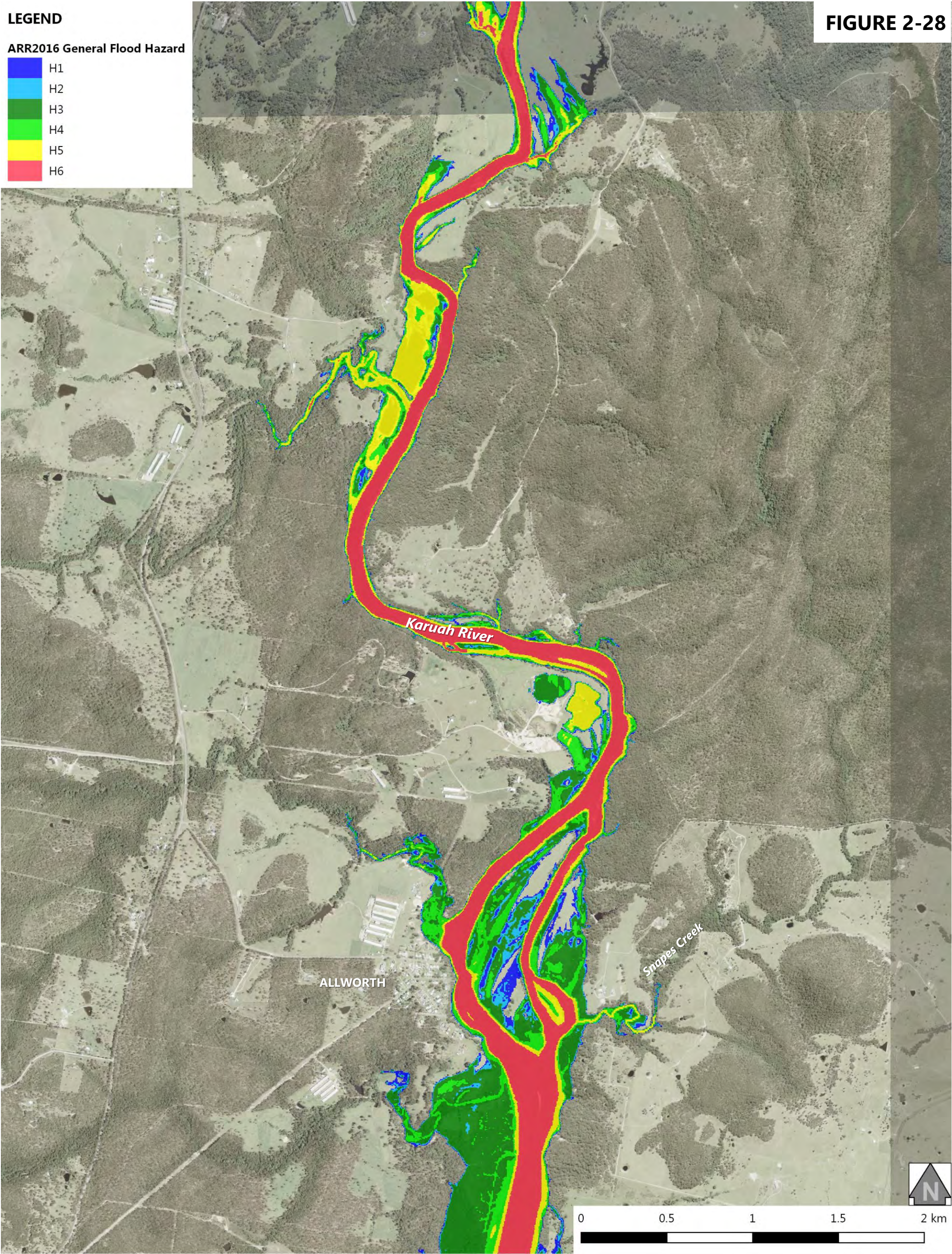


LEGEND

ARR2016 General Flood Hazard

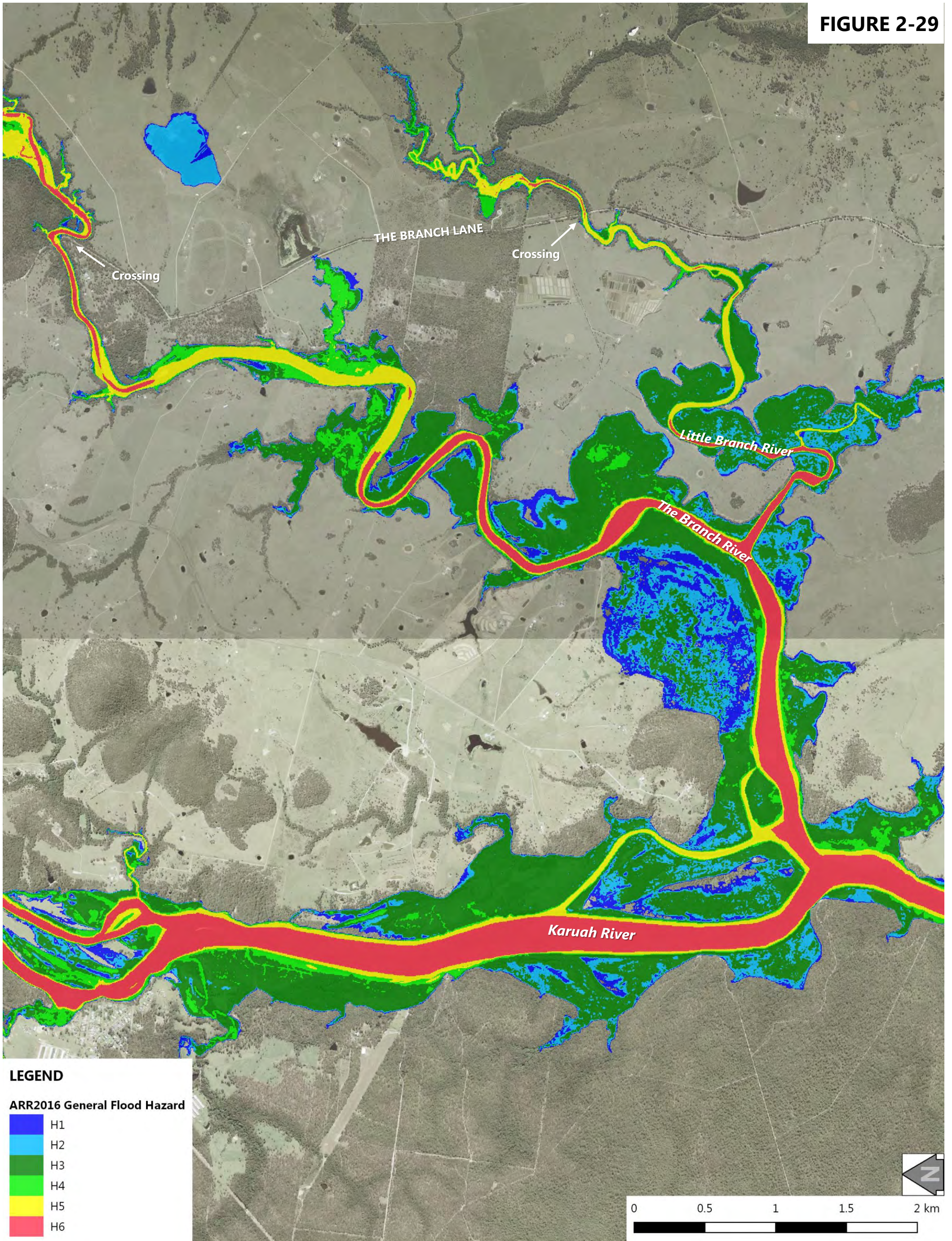
- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 2-28





**FIGURE 2-29**



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Flood Mapping\_A3\_Portrait\_20%AEP\_RevA.pdf

**20% AEP DESIGN FLOOD EVENT  
ARR2016 GENERAL FLOOD HAZARD AT THE BRANCH**

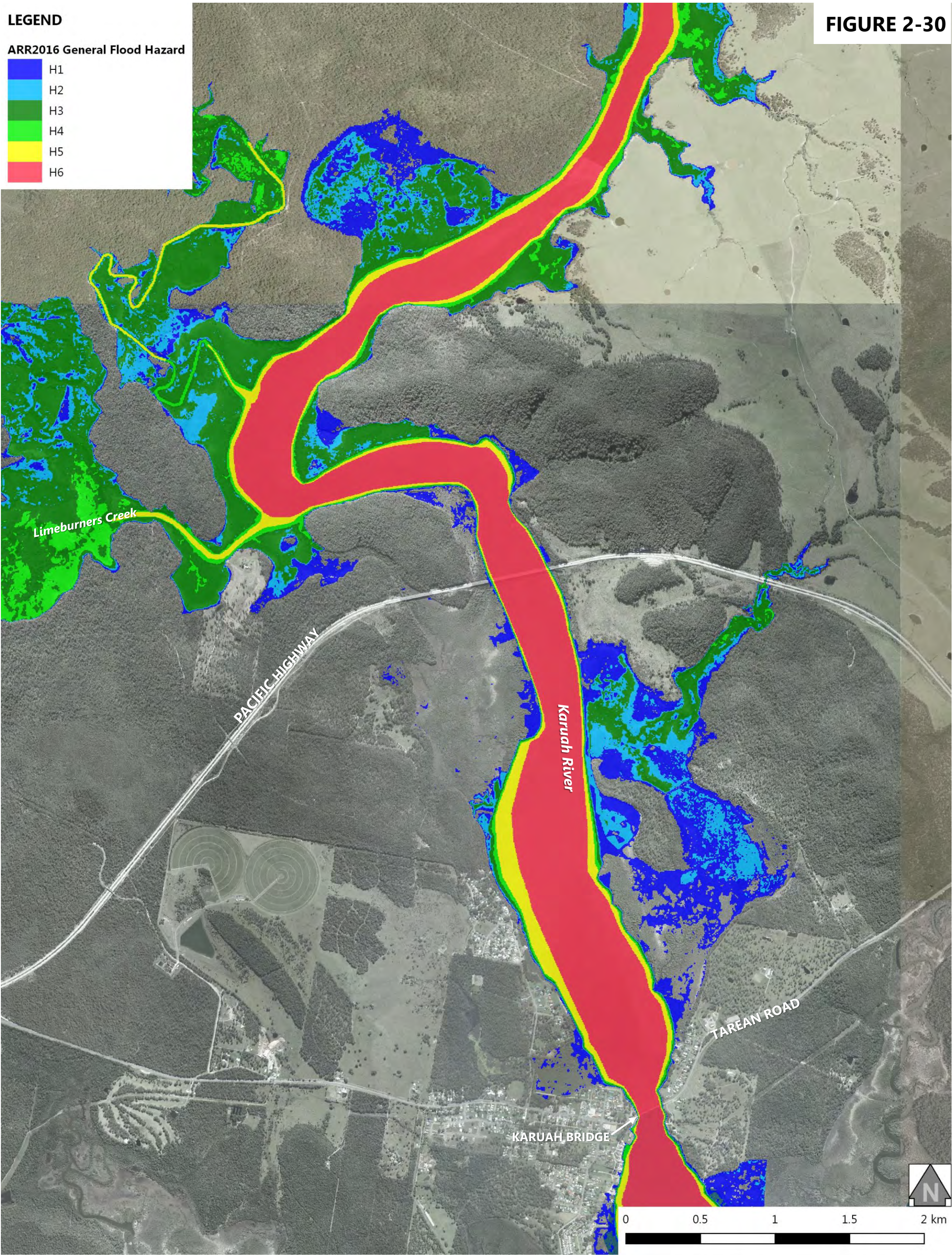


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 2-30





LEGEND

Peak Flood Levels (mAHD)

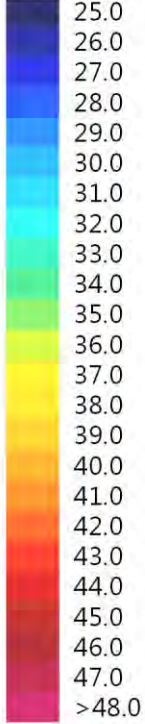
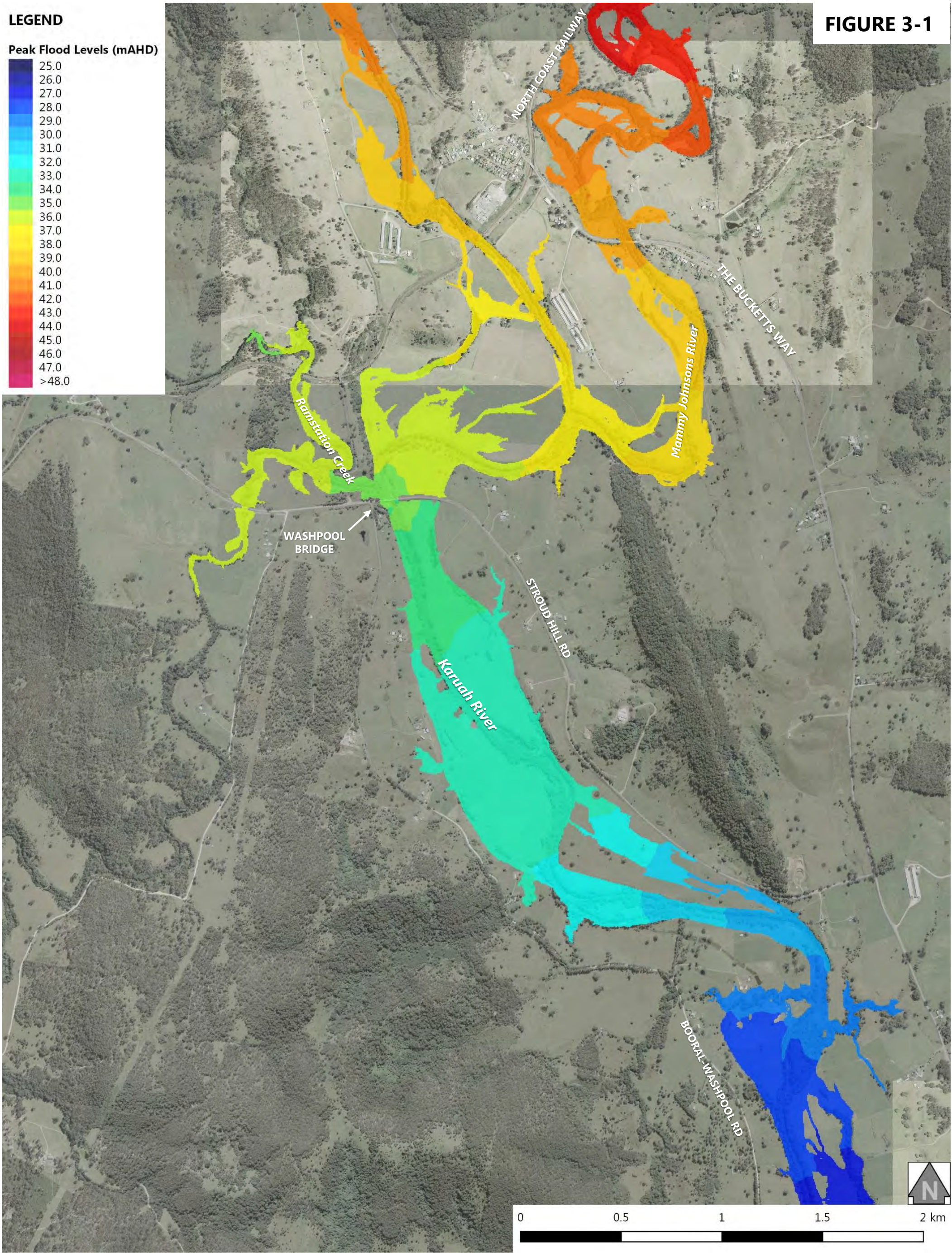


FIGURE 3-1





LEGEND

Peak Flood Levels (mAHD)

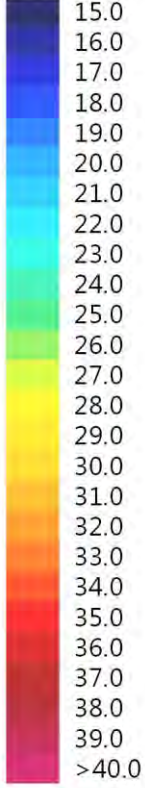
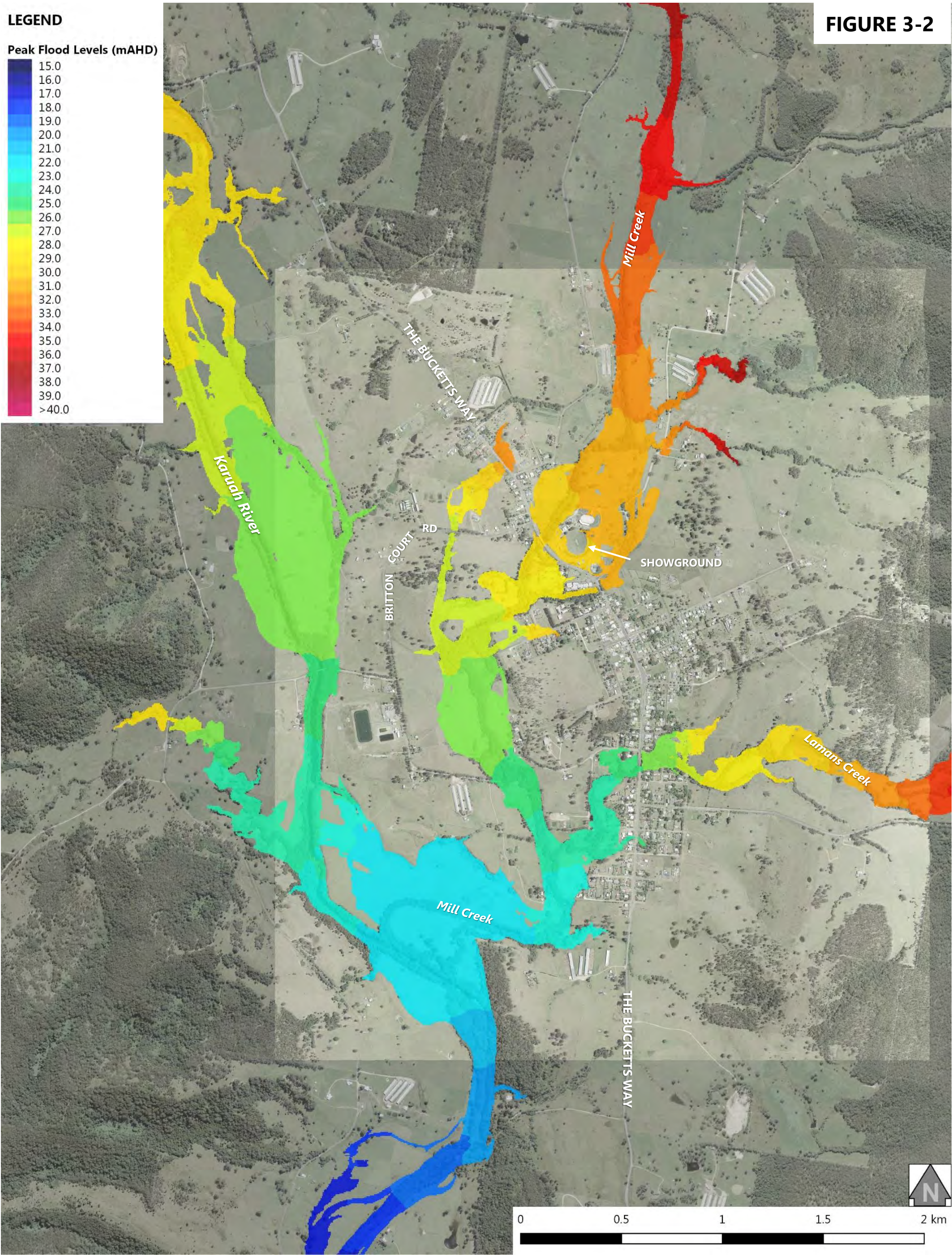


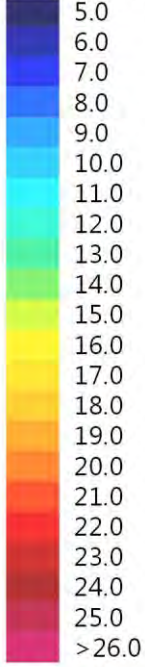
FIGURE 3-2



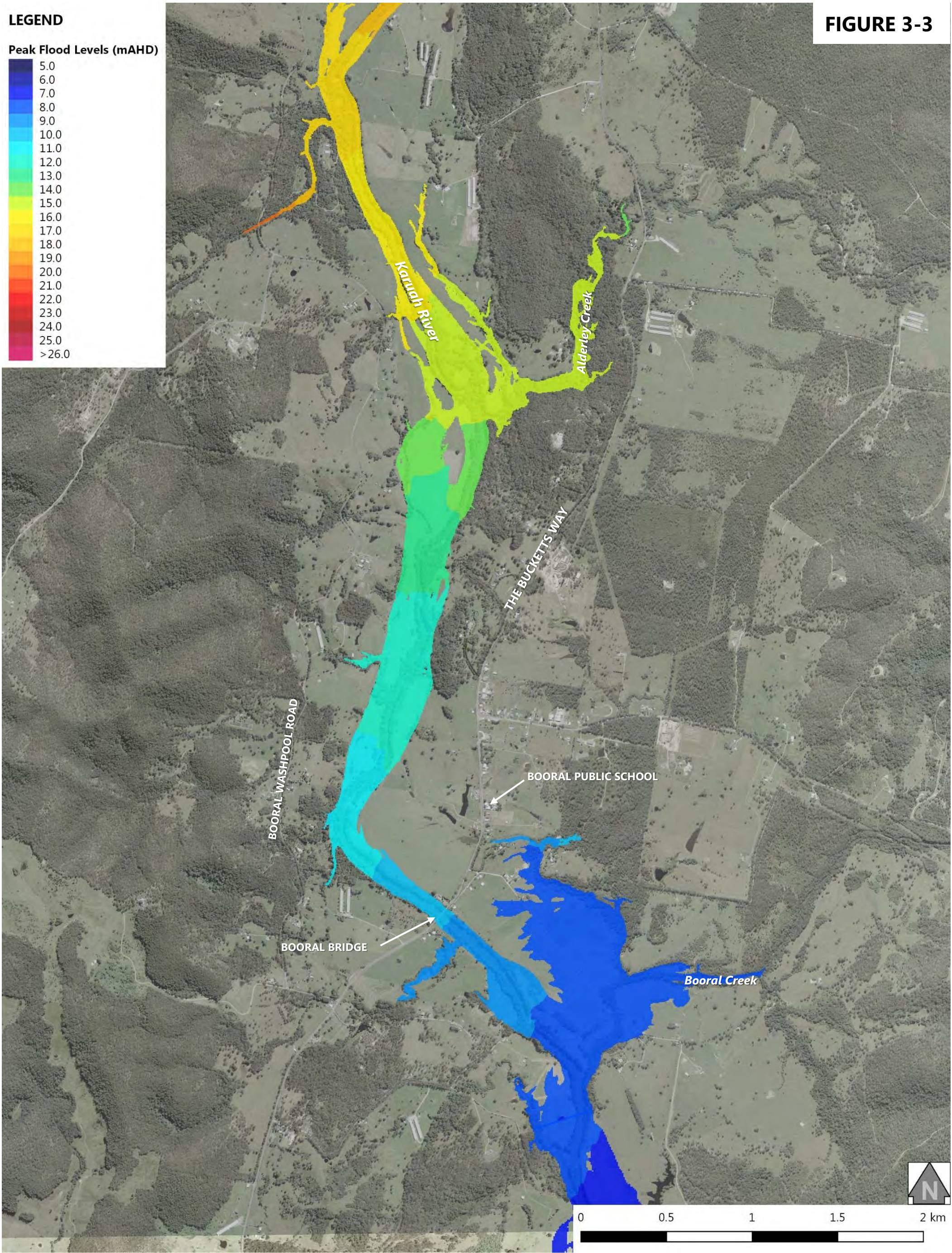


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 3-3**





LEGEND

Peak Flood Levels (mAHD)

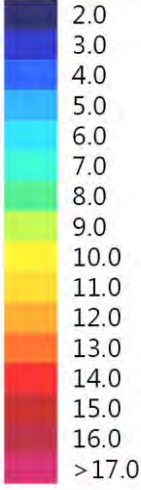


FIGURE 3-4

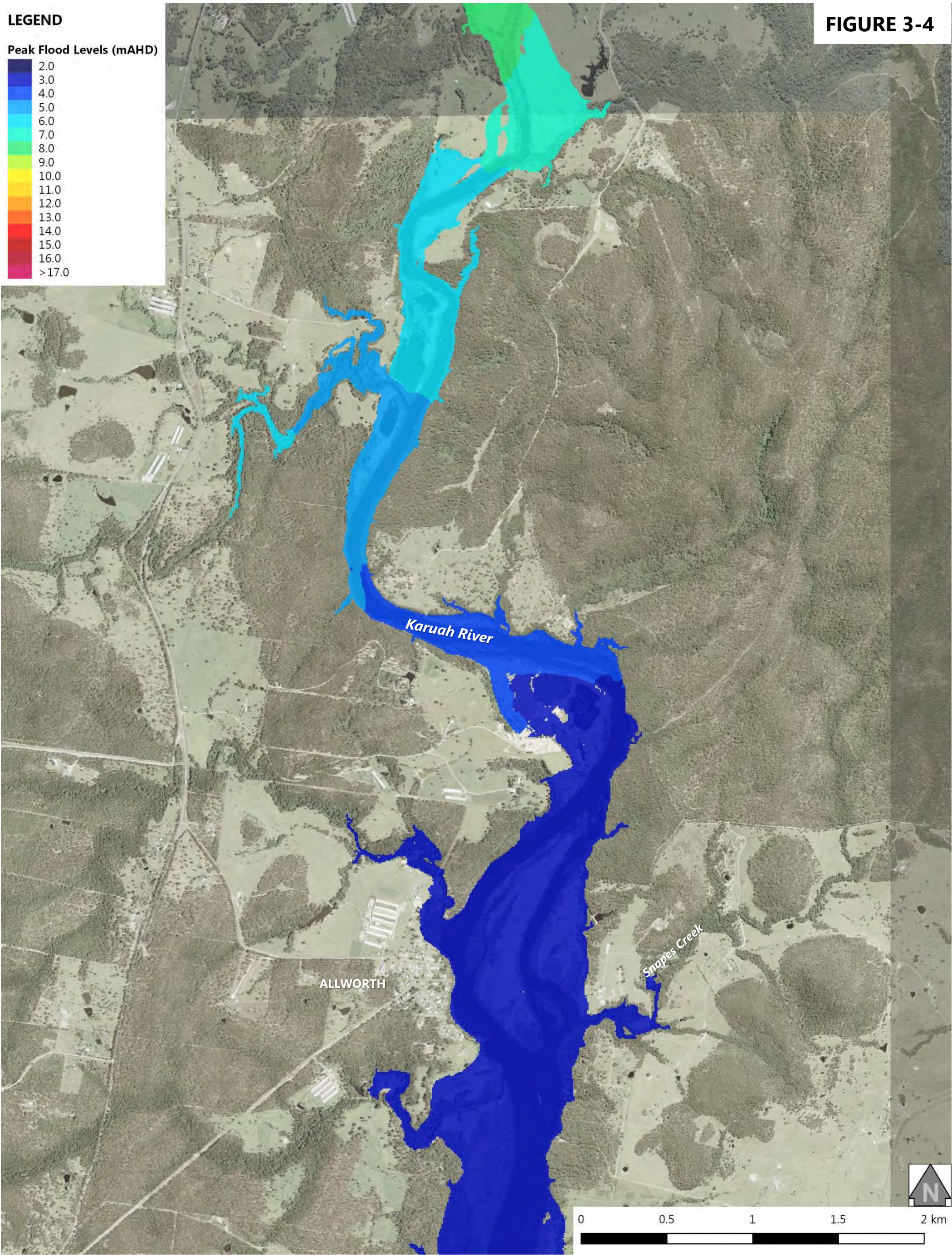
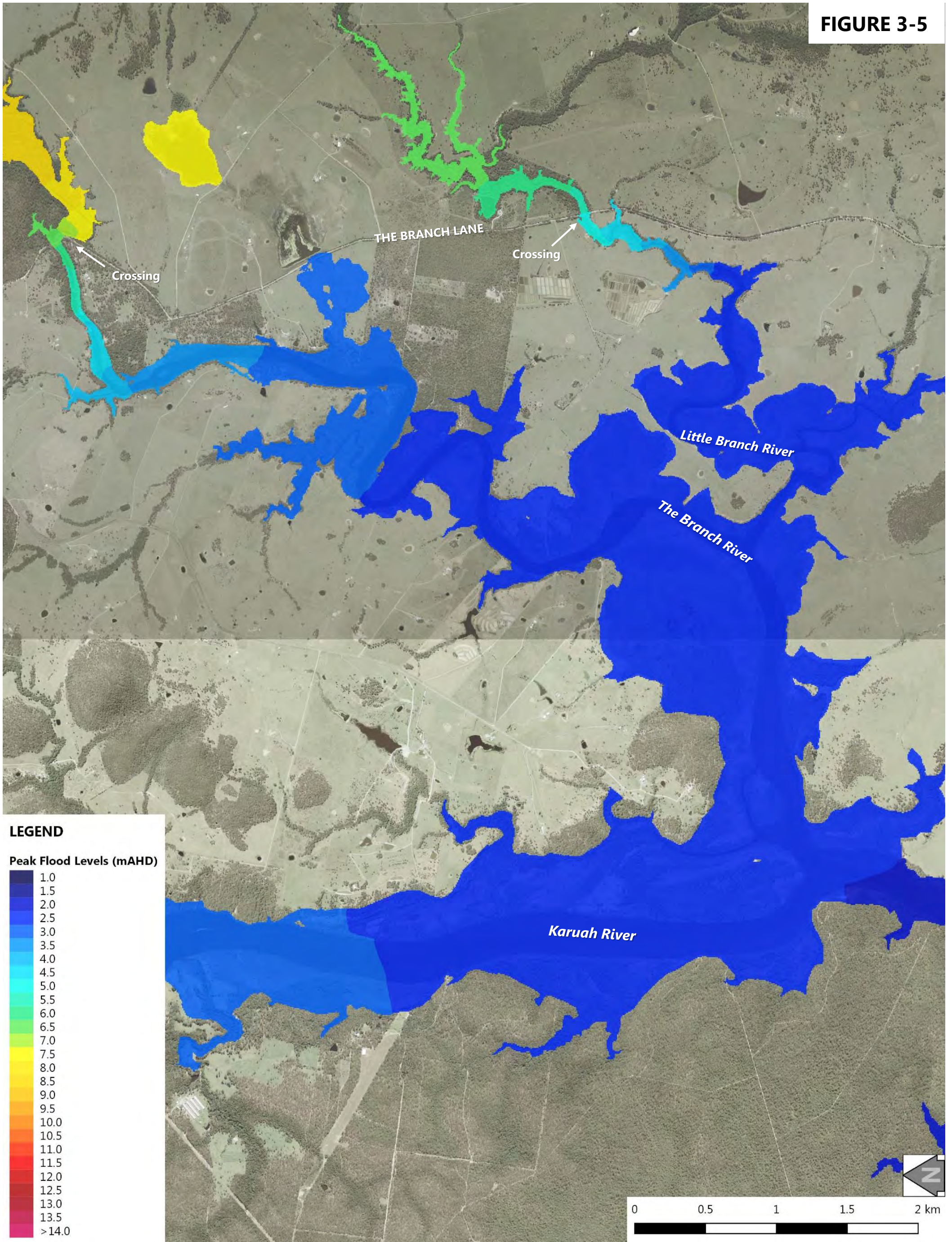




FIGURE 3-5



**Advisian**

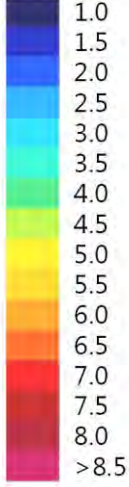
WorleyParsons Group

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Flood Mapping\_A3\_Portrait\_5%AEP\_RevA.pdf

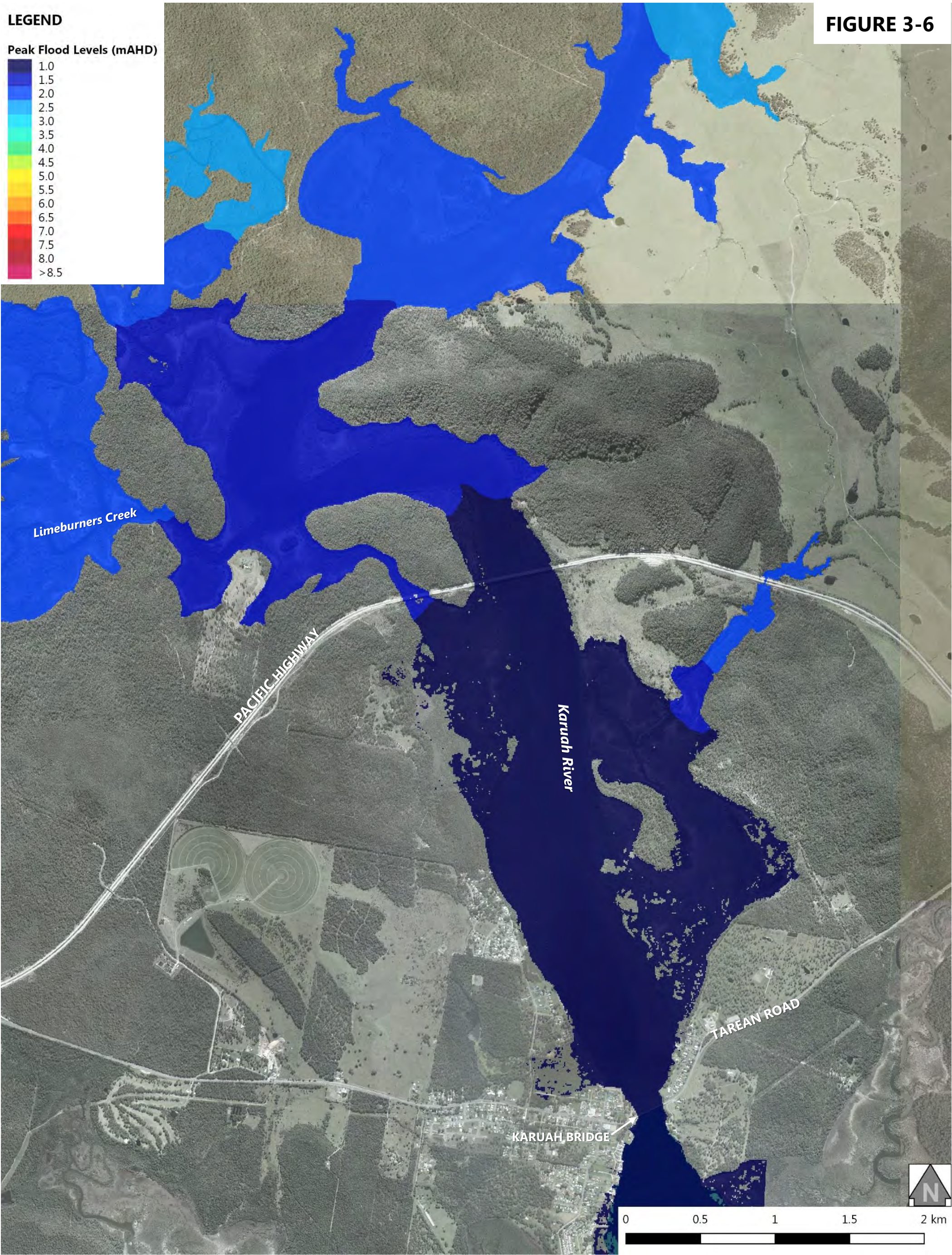


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 3-6**





LEGEND

Peak Flood Depth (m)

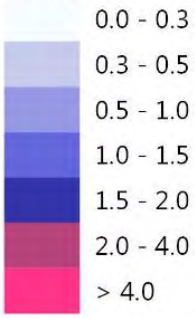
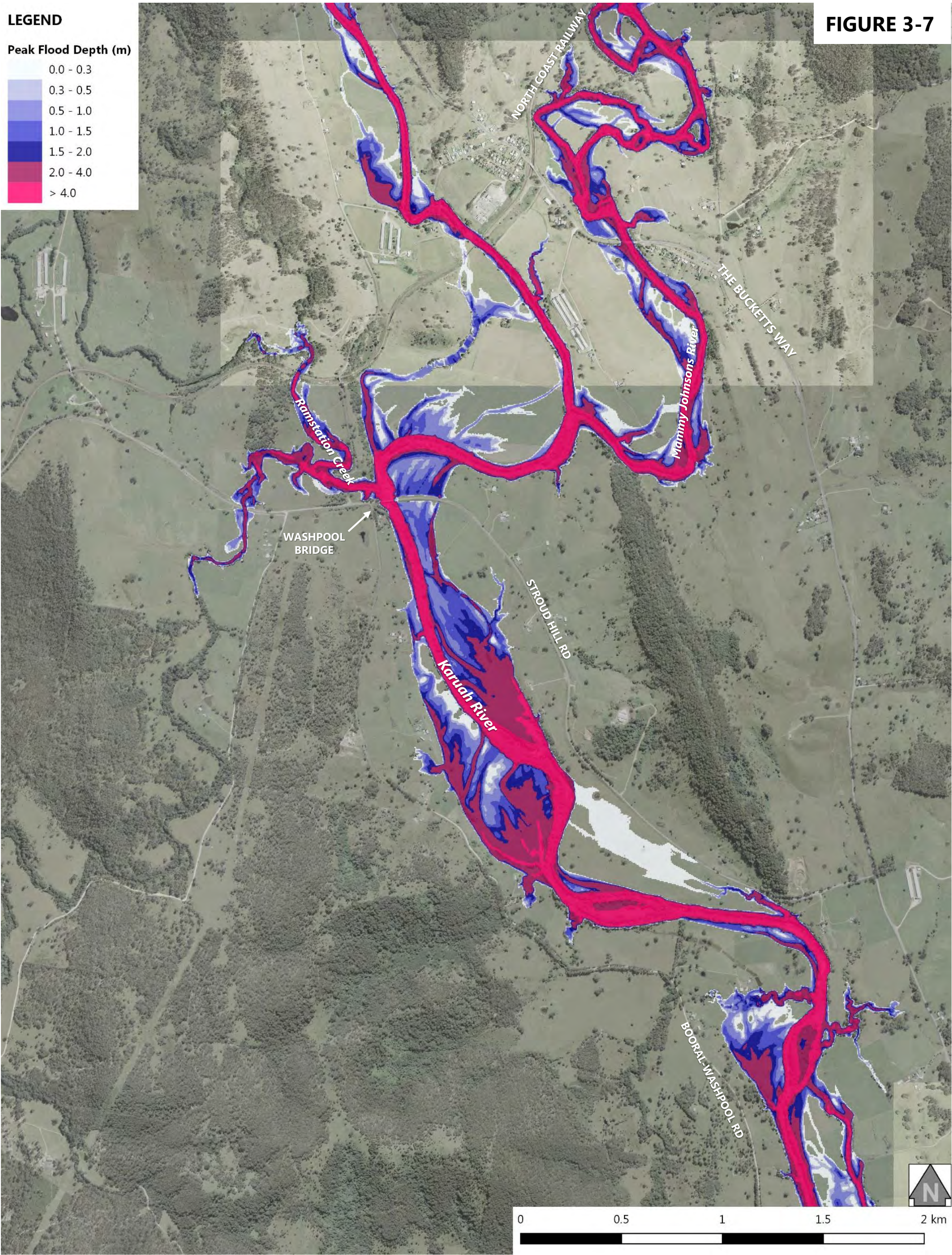


FIGURE 3-7





LEGEND

Peak Flood Depth (m)

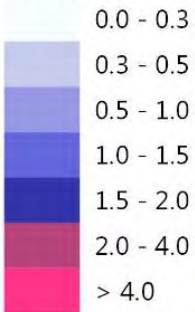
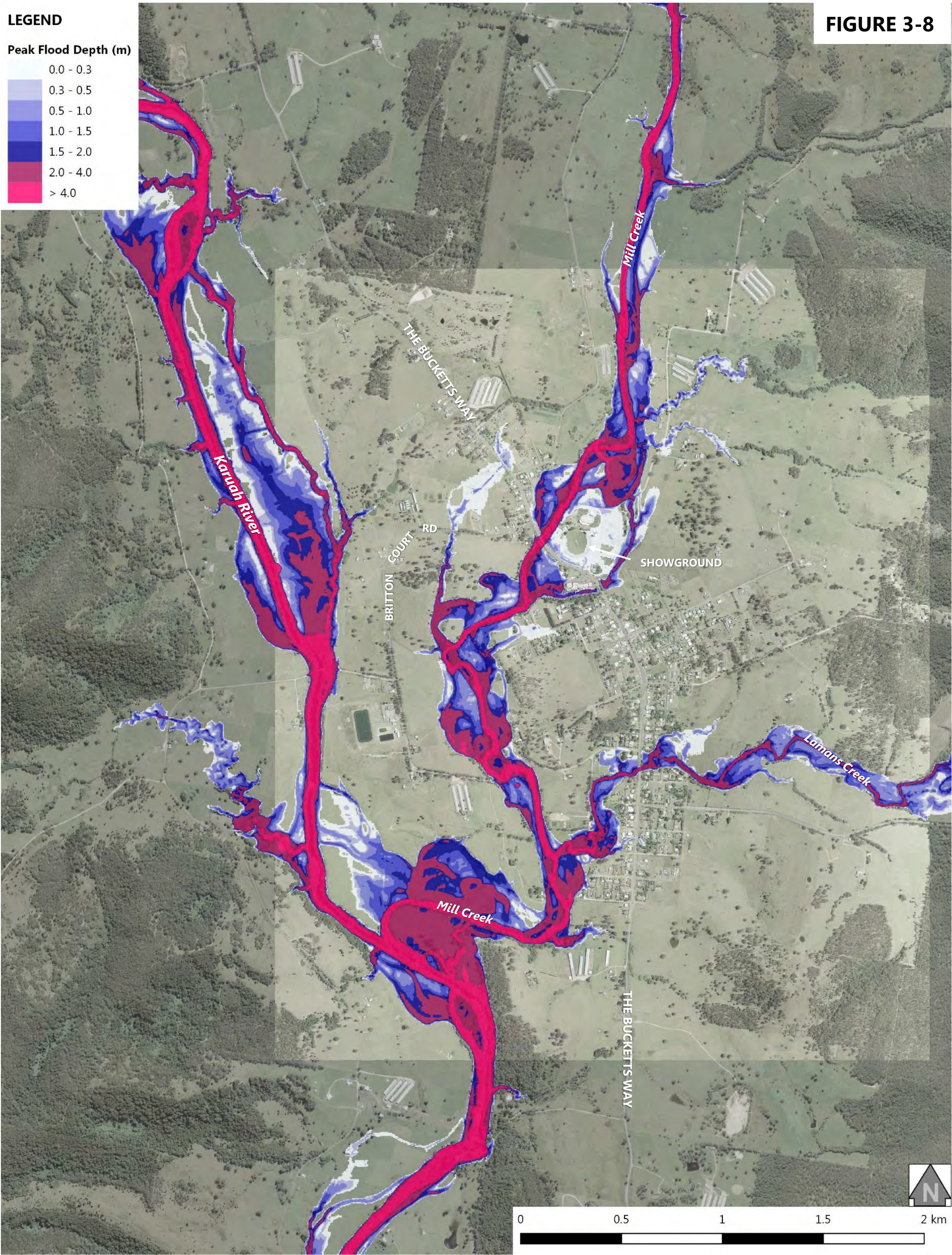


FIGURE 3-8





LEGEND

Peak Flood Depth (m)

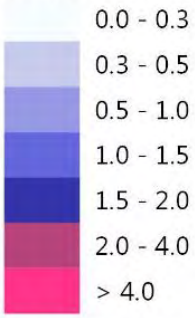
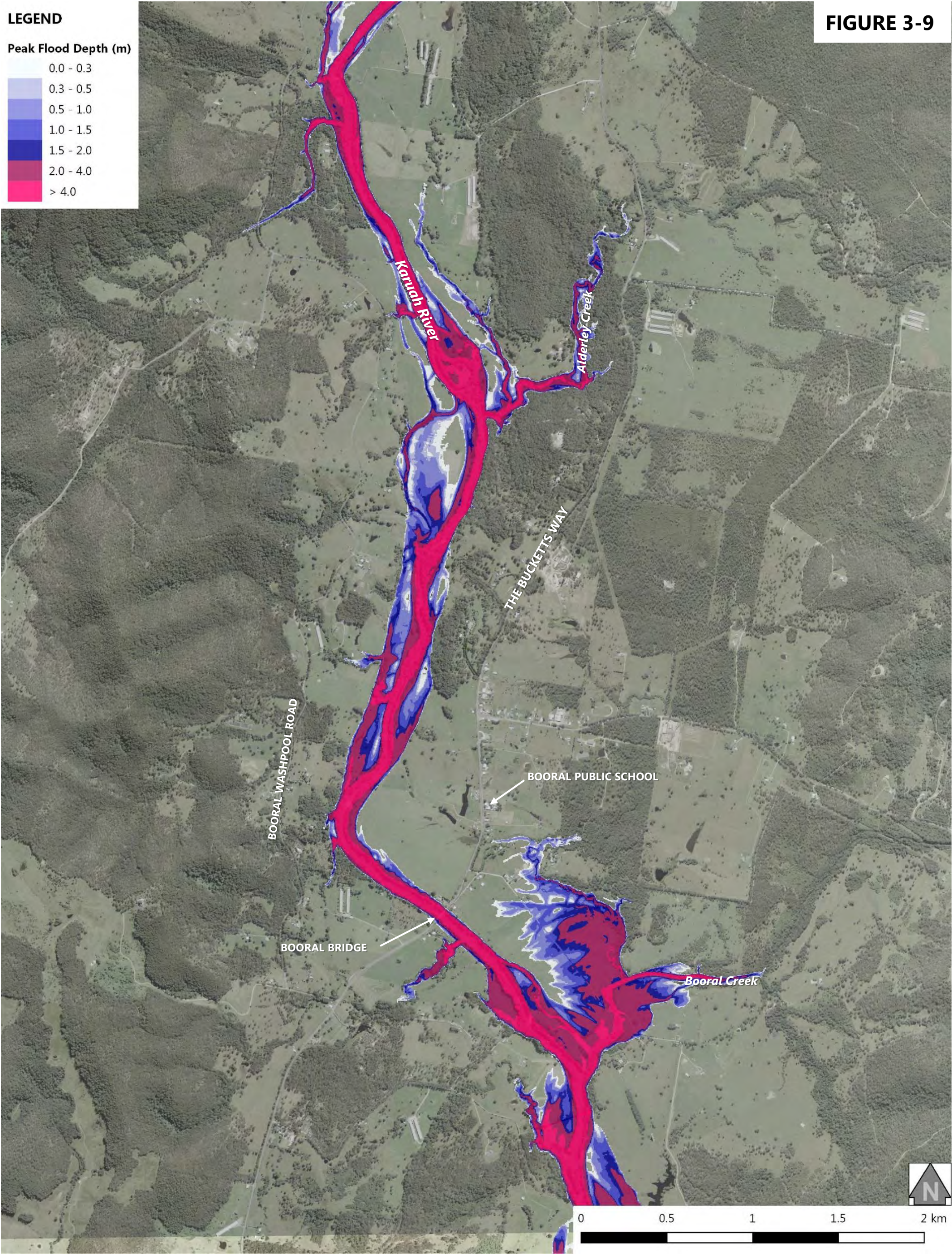


FIGURE 3-9





LEGEND

Peak Flood Depth (m)

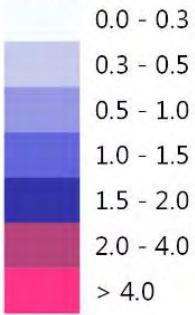
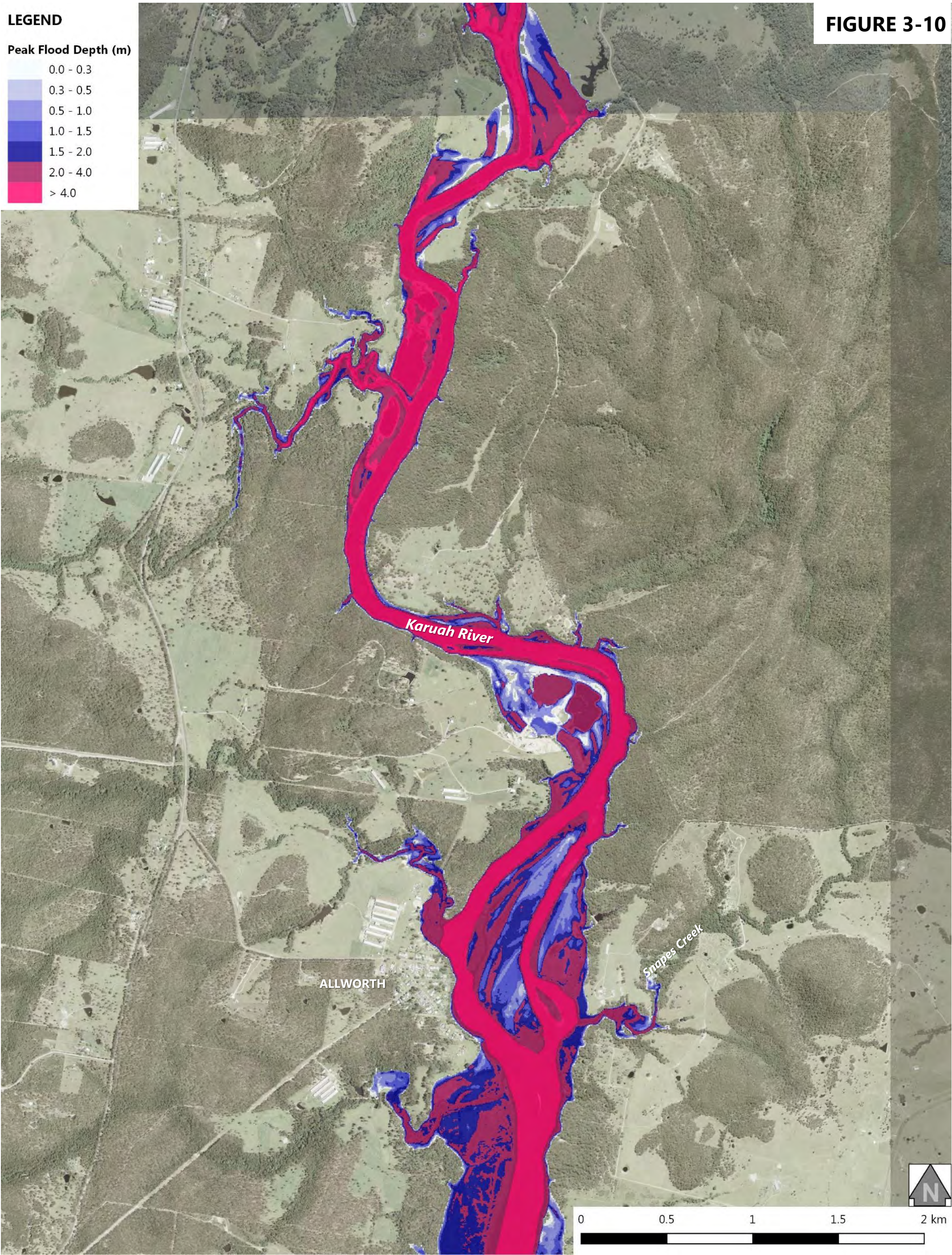
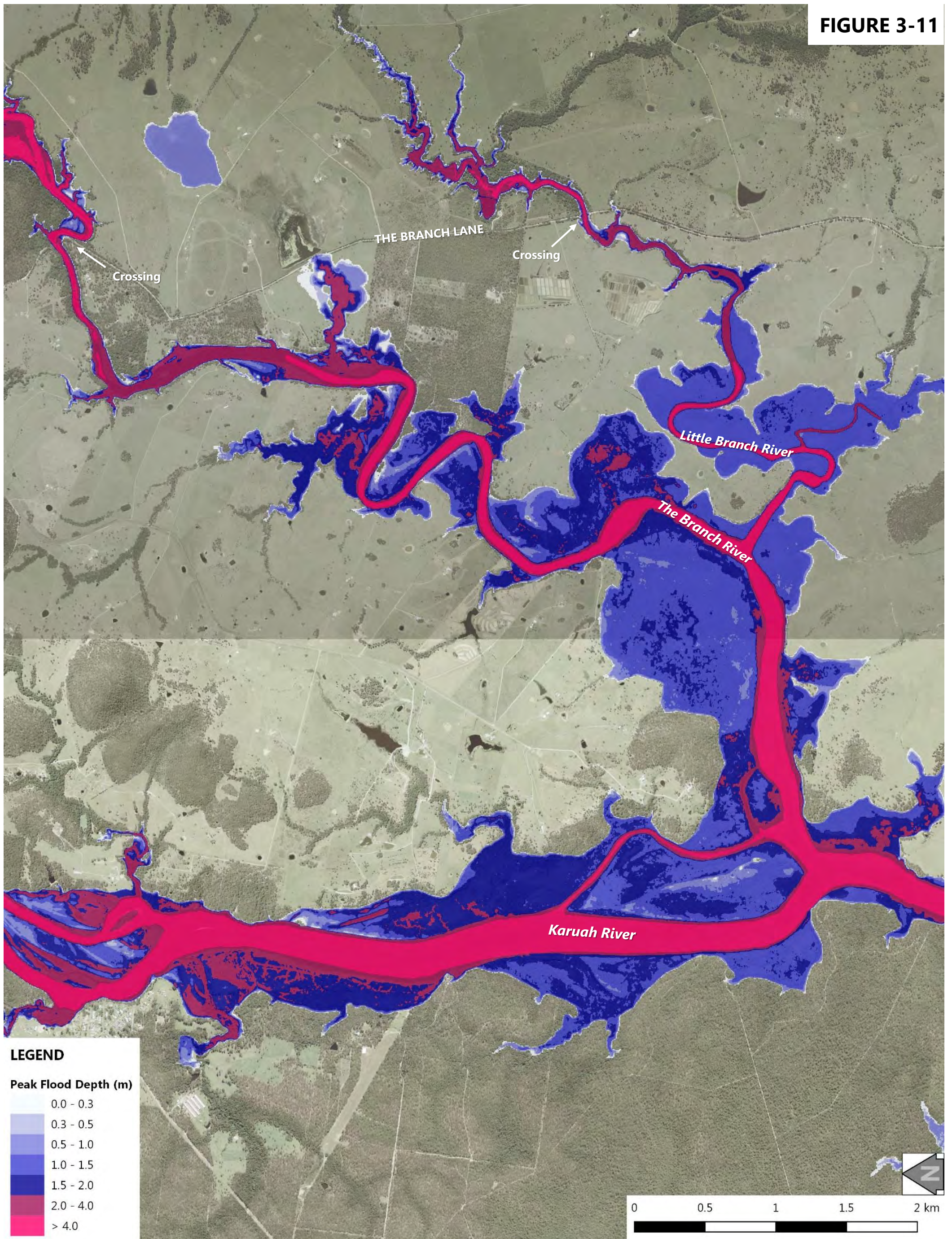


FIGURE 3-10





**FIGURE 3-11**



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Flood Mapping\_A3\_Portrait\_5%AEP\_RevA.pdf

**5% AEP DESIGN FLOOD EVENT  
PEAK FLOOD DEPTH AT THE BRANCH**



LEGEND

Peak Flood Depth (m)

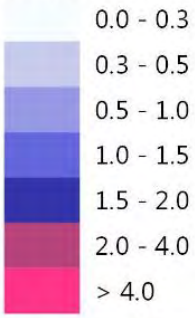
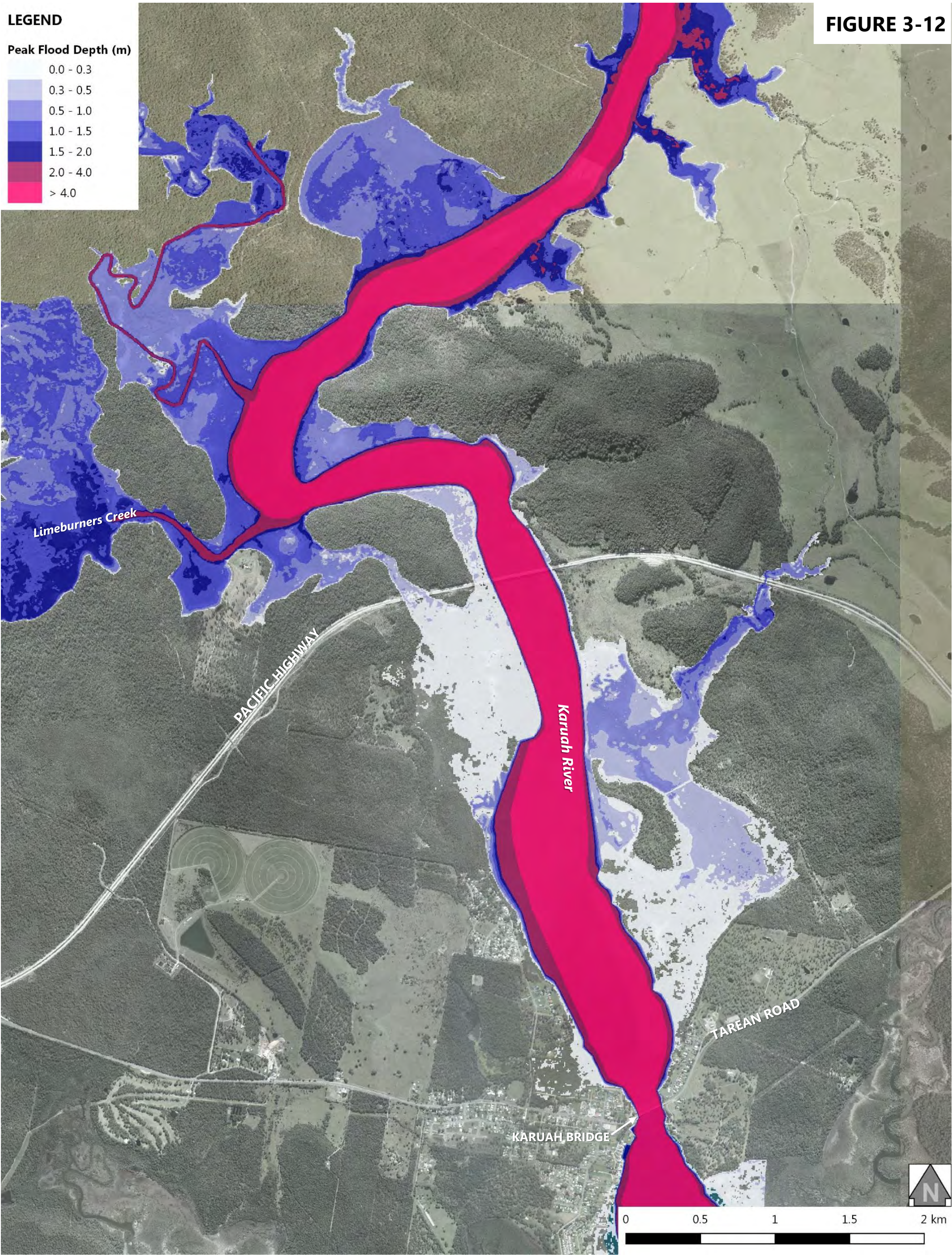


FIGURE 3-12





LEGEND

Peak Flood Levels (mAHD)

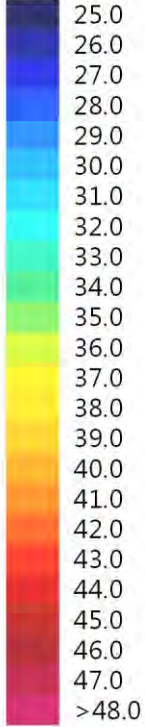
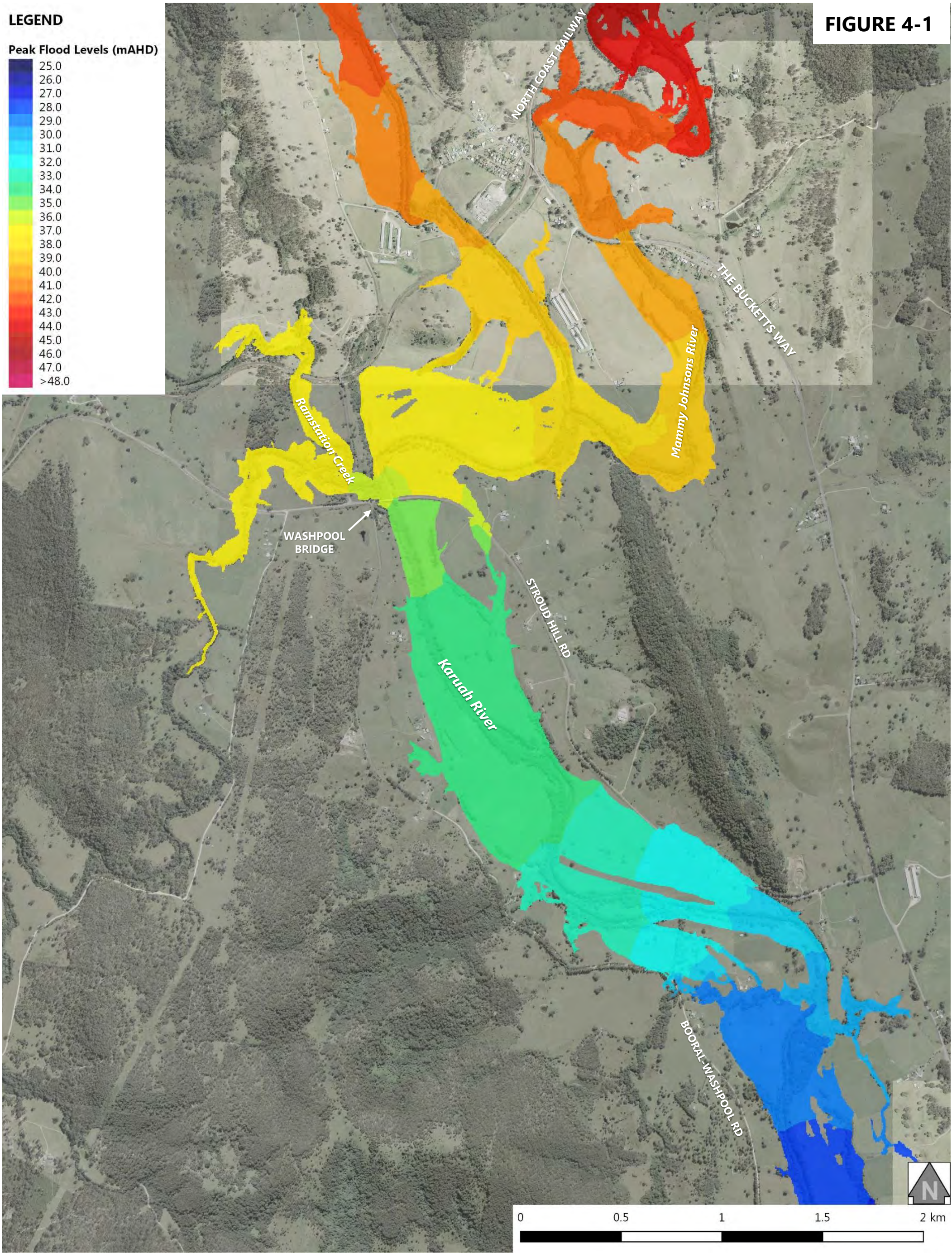


FIGURE 4-1





LEGEND

Peak Flood Levels (mAHD)

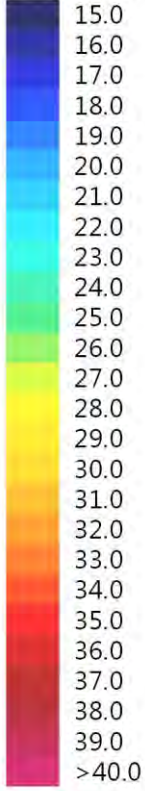
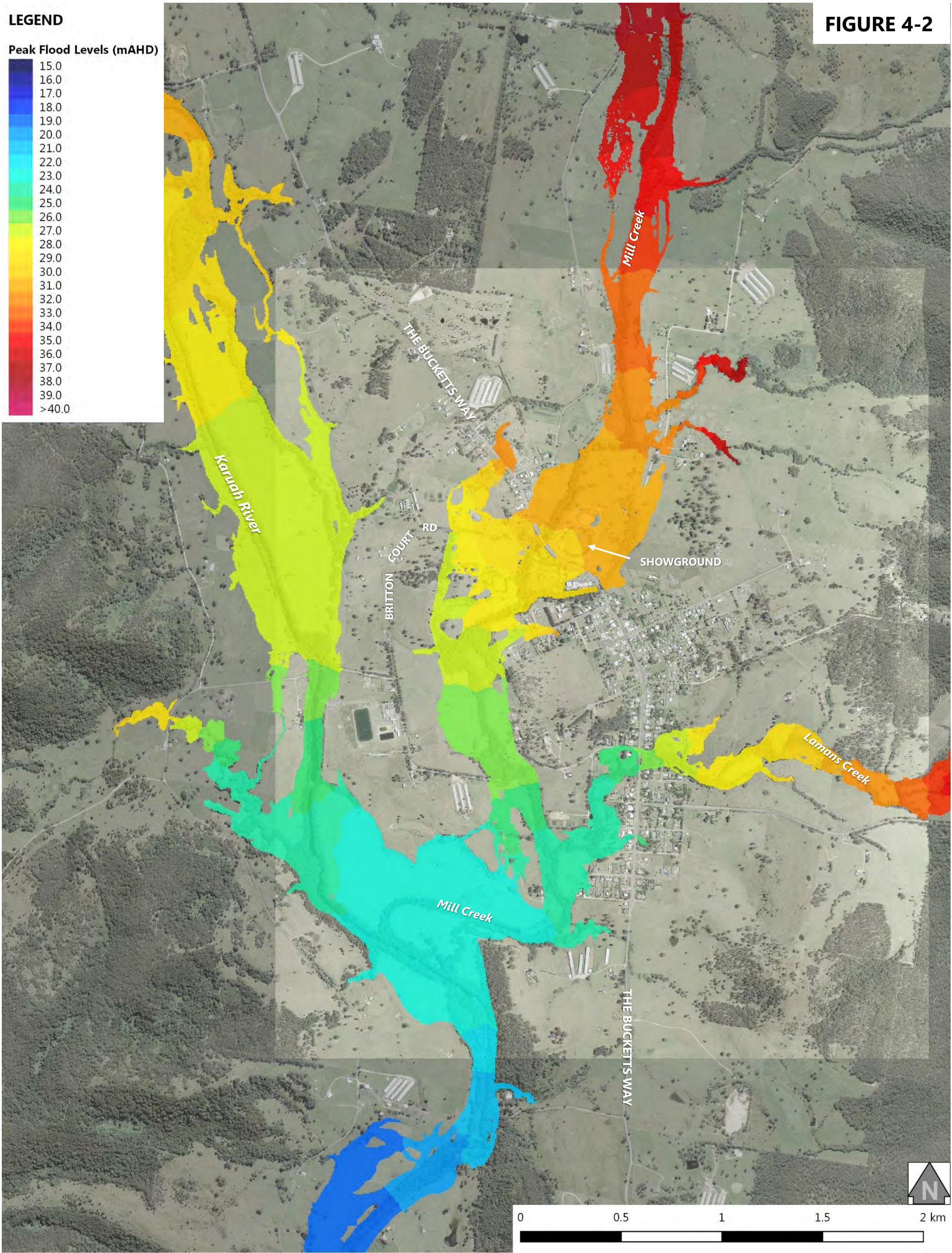


FIGURE 4-2





LEGEND

Peak Flood Levels (mAHD)

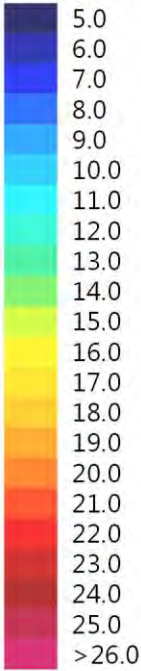
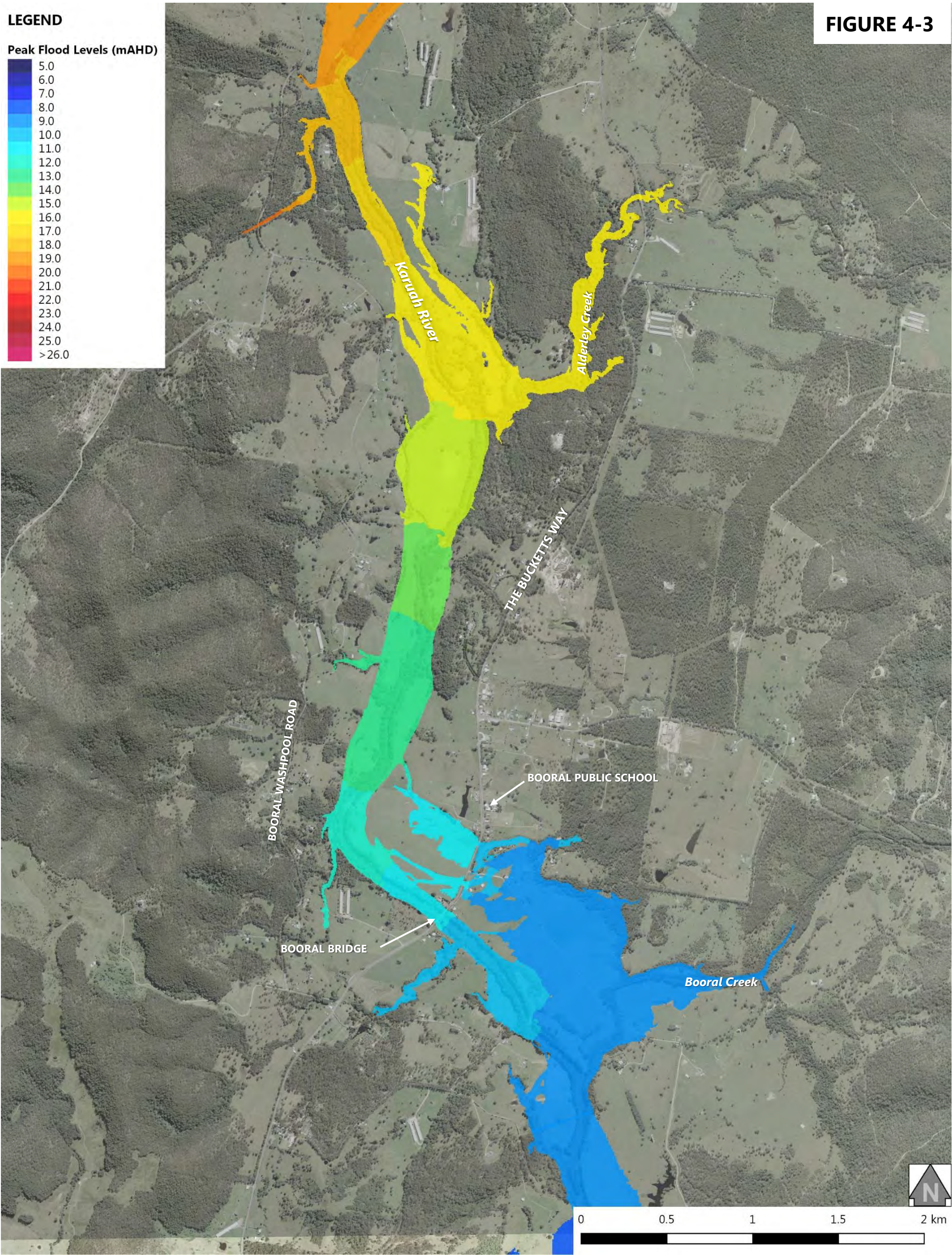


FIGURE 4-3





LEGEND

Peak Flood Levels (mAHD)

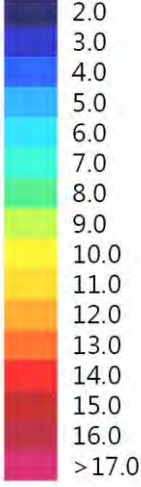
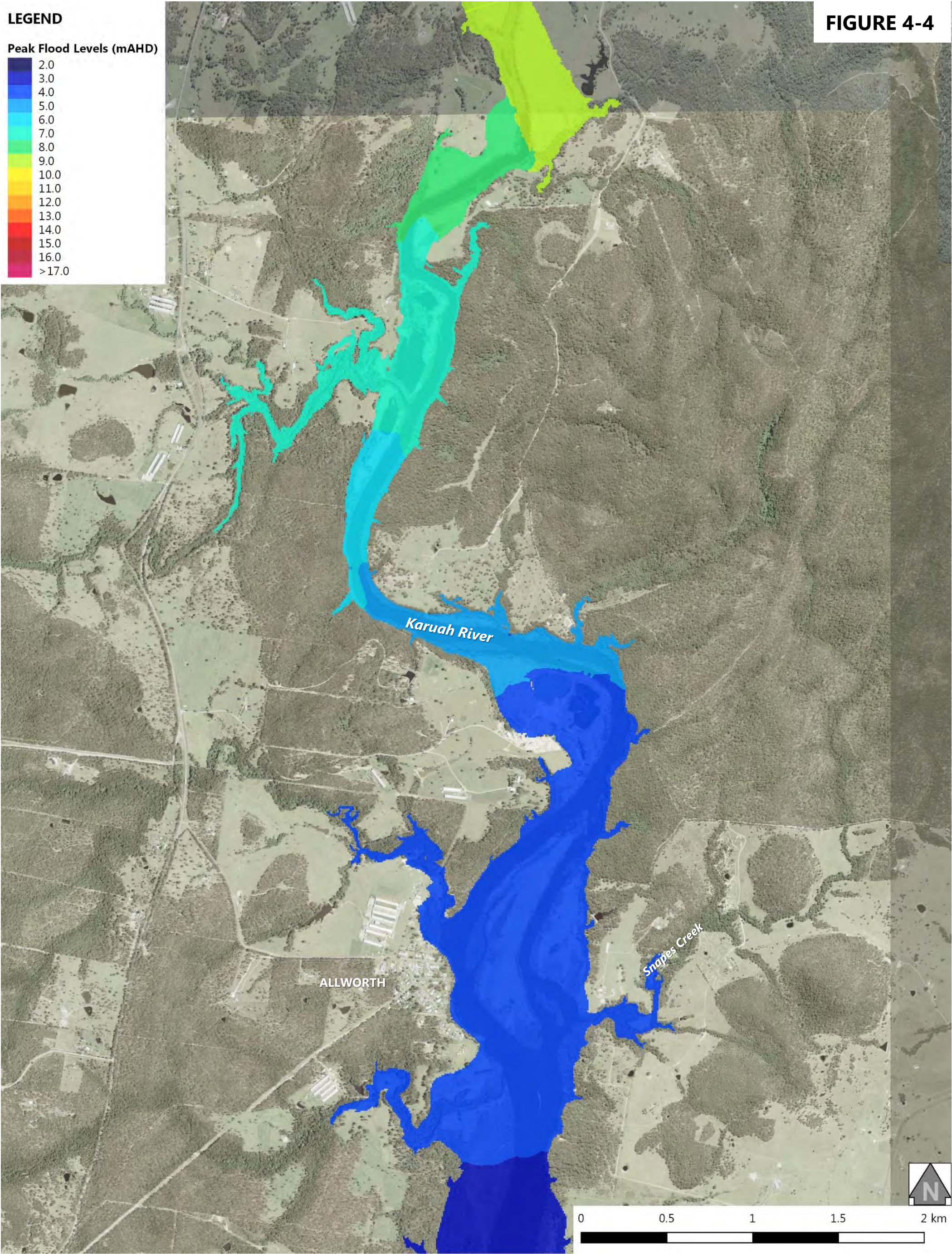
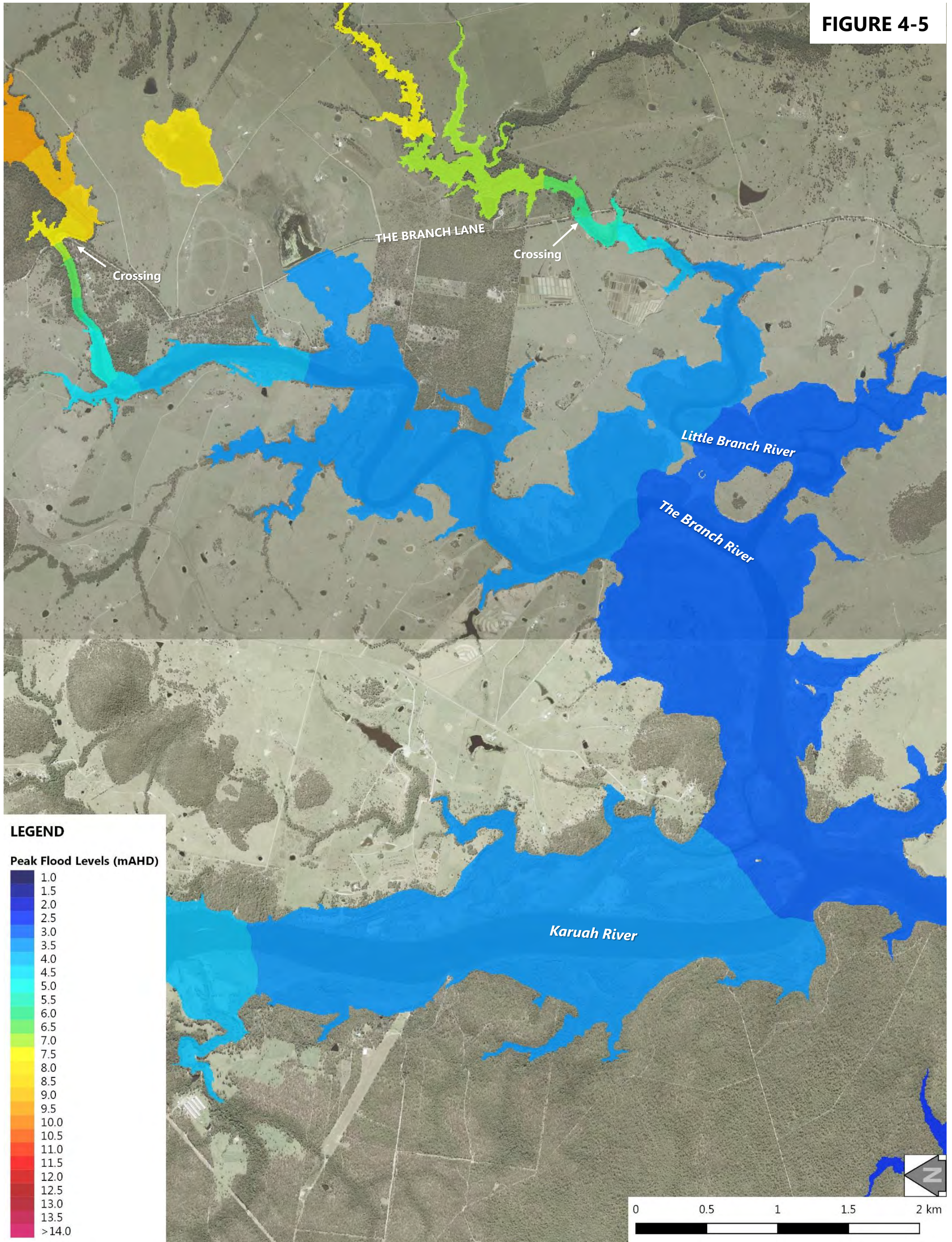


FIGURE 4-4





**FIGURE 4-5**



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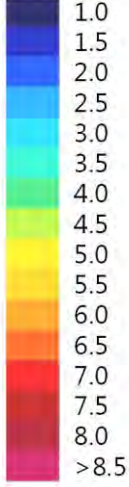
301015-03792 – Karuah River and Stroud Flood Study Update – Volume 2  
Flood Mapping\_A3\_Portrait\_2%AEF\_RevA.pdf

**2% AEP DESIGN FLOOD EVENT  
PEAK FLOOD LEVELS AT THE BRANCH**

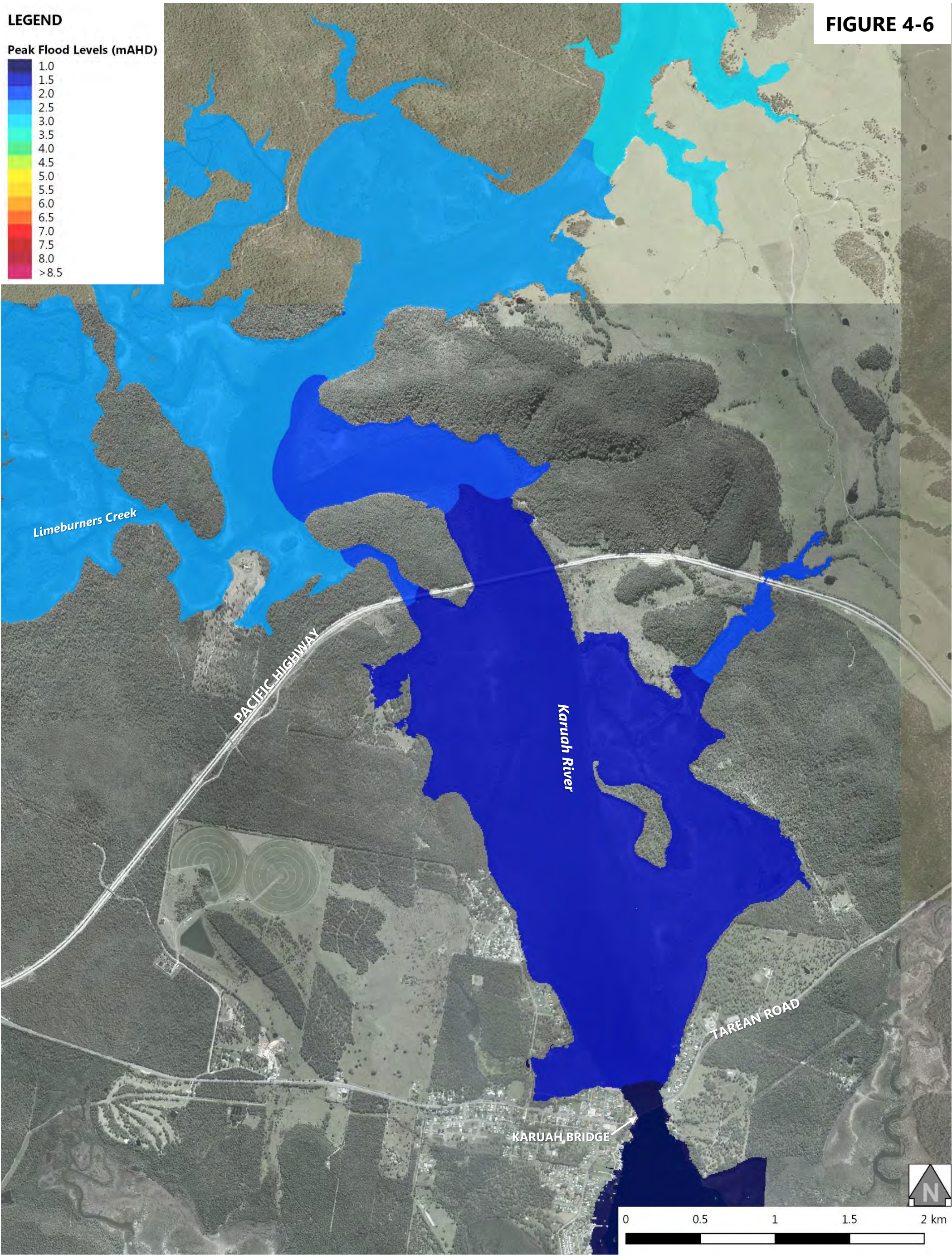


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 4-6**





LEGEND

Peak Flood Depth (m)

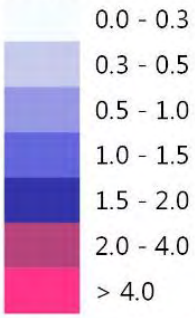
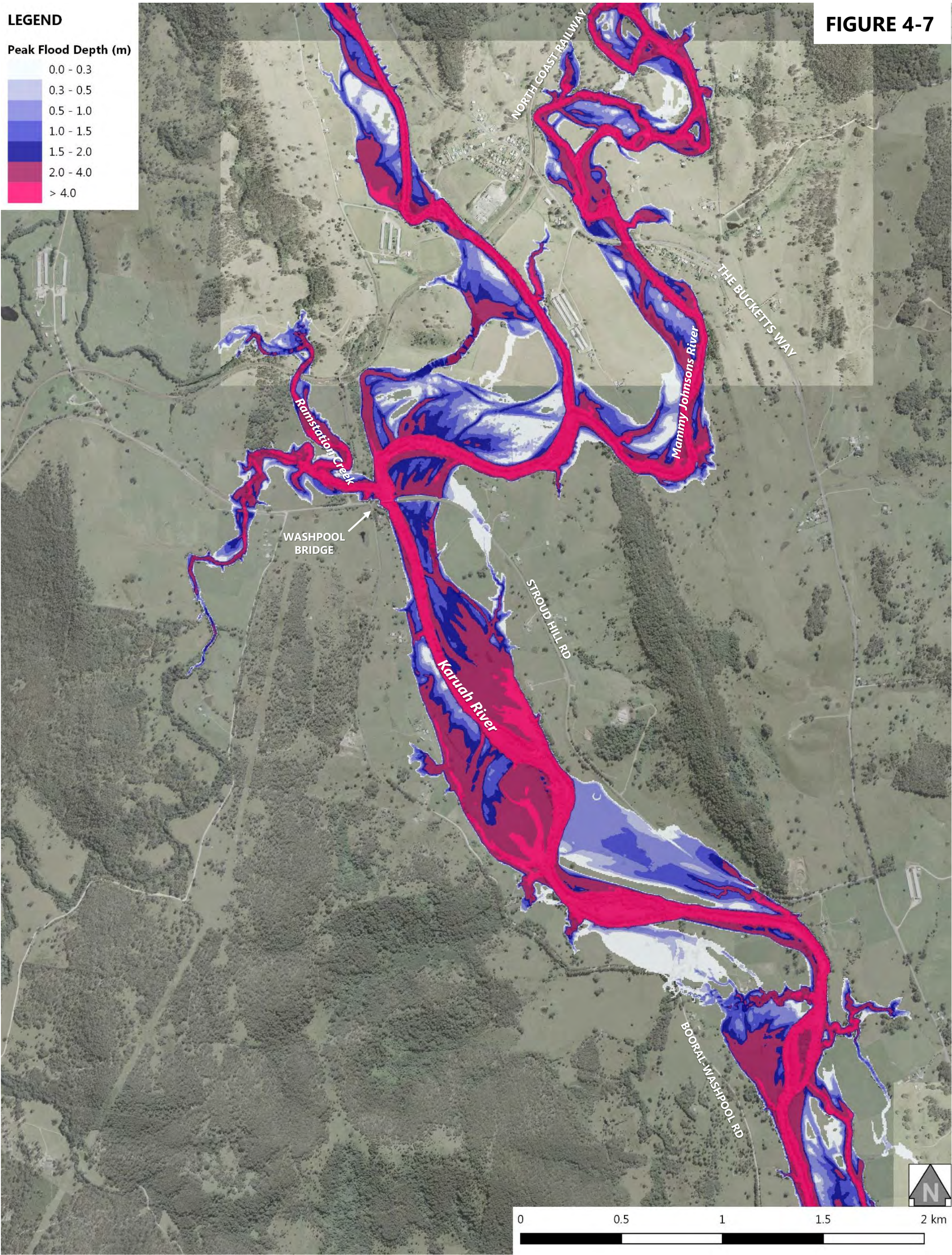


FIGURE 4-7





LEGEND

Peak Flood Depth (m)

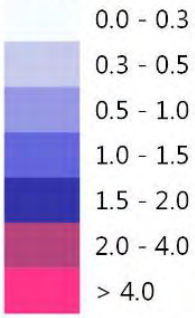
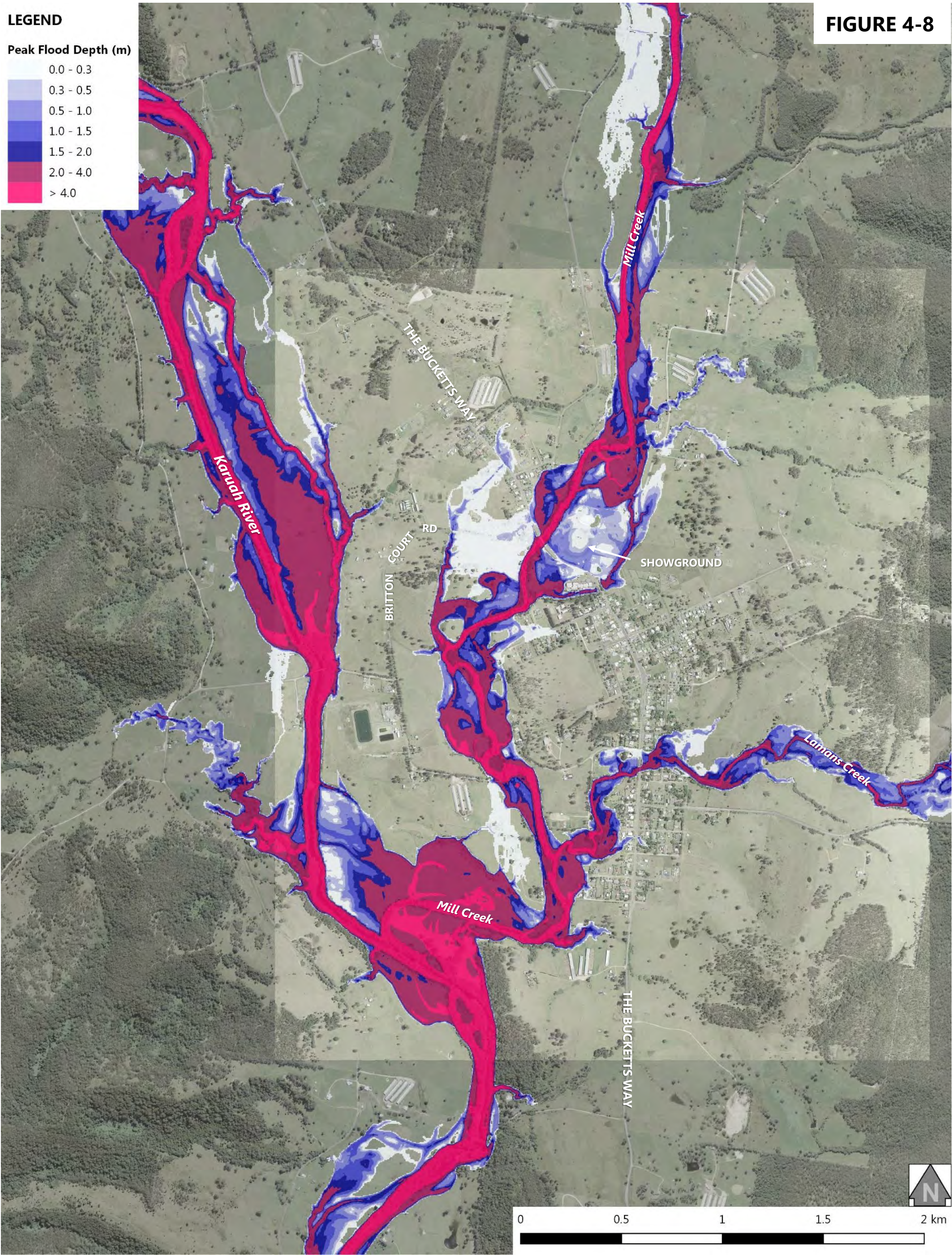


FIGURE 4-8





LEGEND

Peak Flood Depth (m)

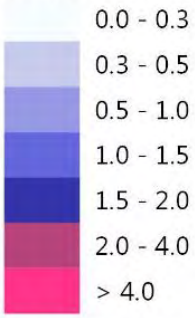
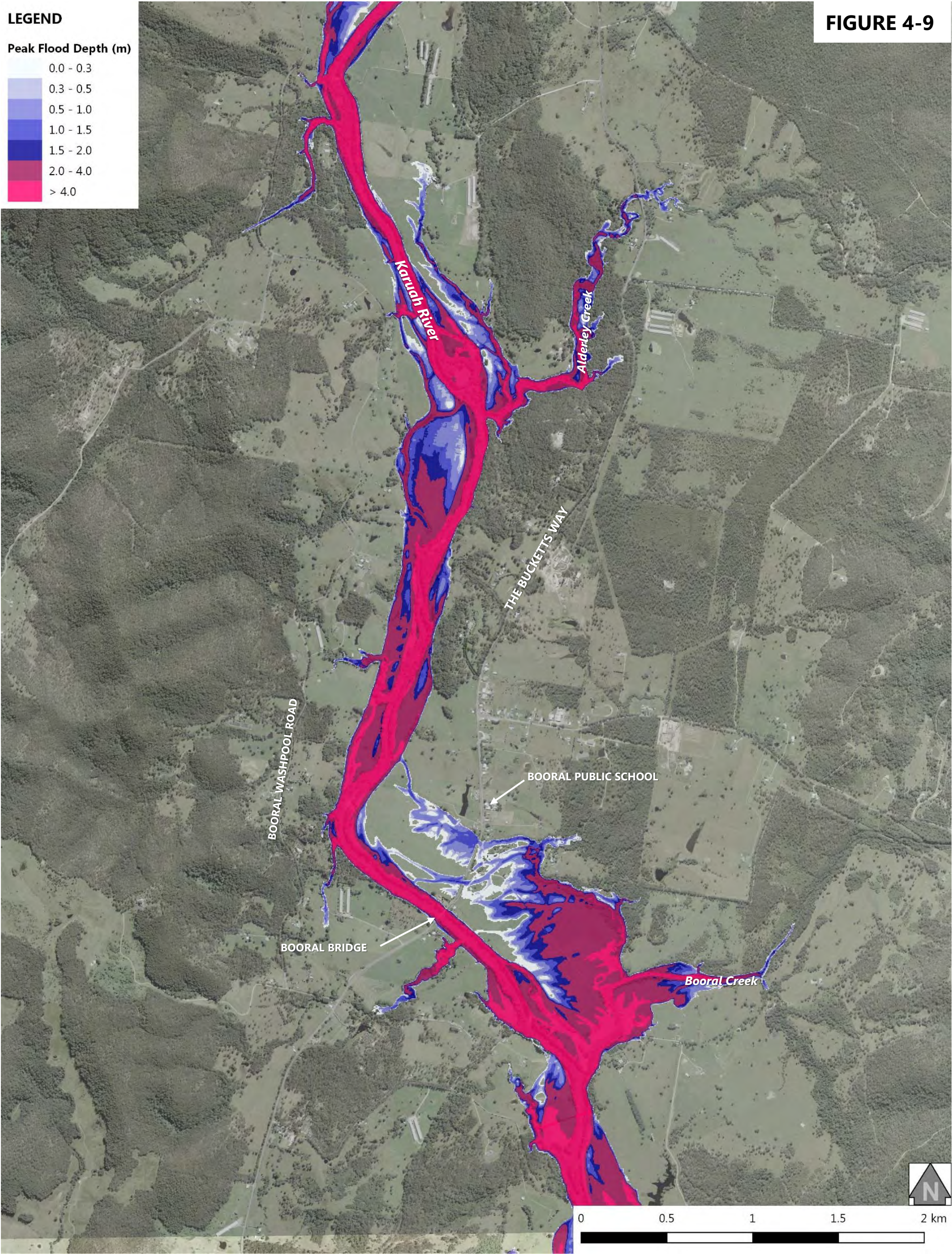


FIGURE 4-9





LEGEND

Peak Flood Depth (m)

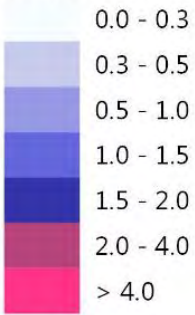
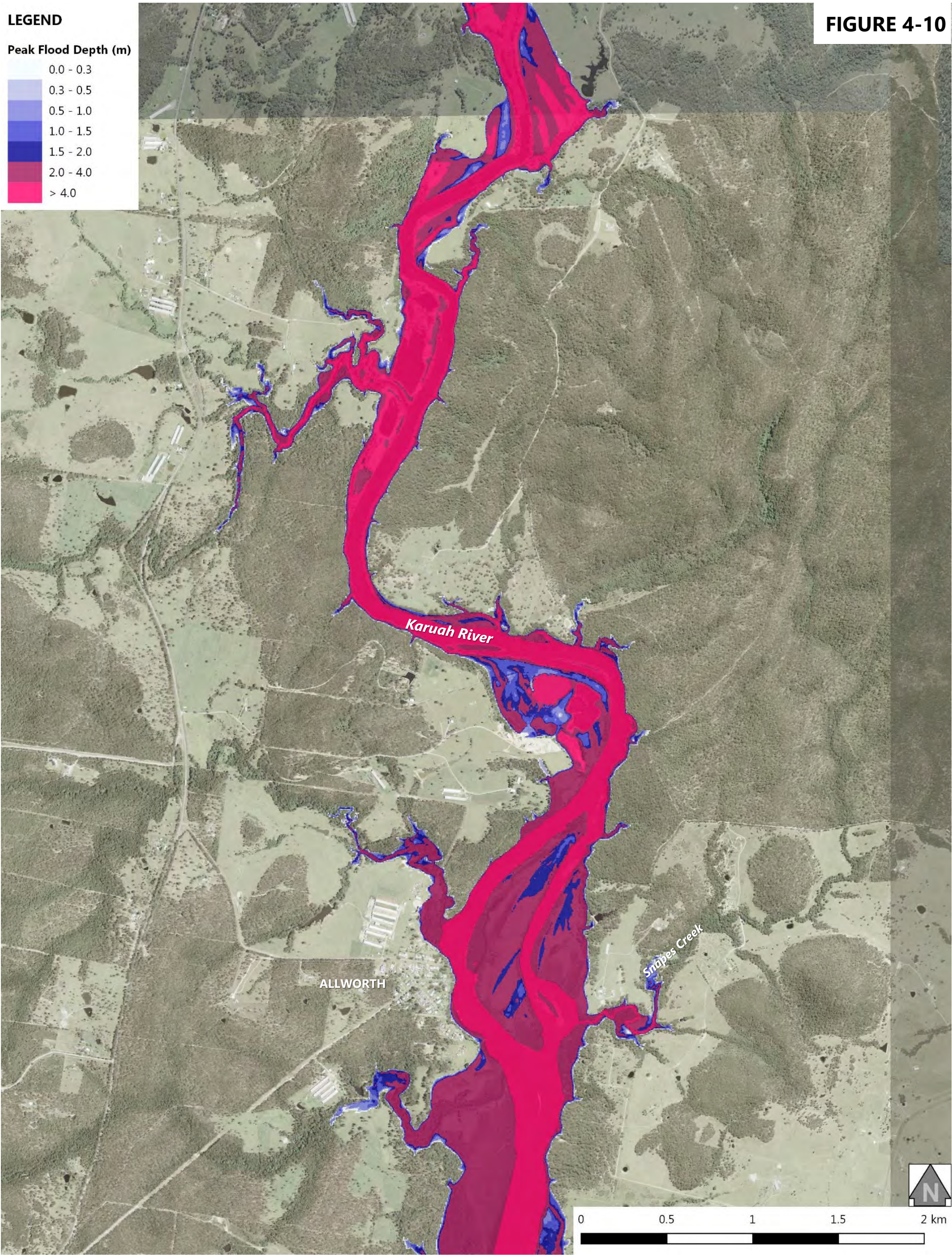
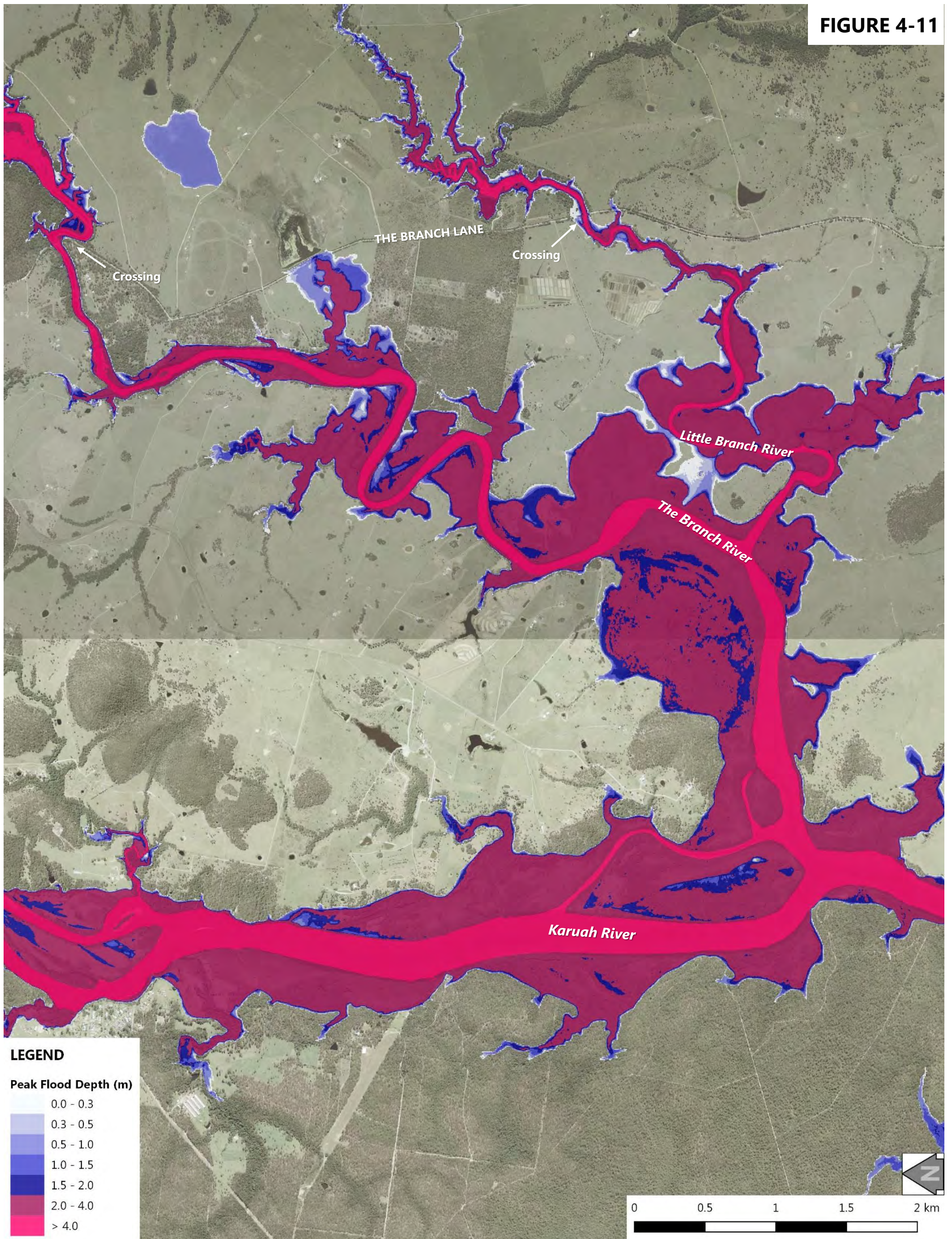


FIGURE 4-10





**FIGURE 4-11**



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Flood Mapping\_A3\_Portrait\_2%AEP\_RevA.pdf

**2% AEP DESIGN FLOOD EVENT  
PEAK FLOOD DEPTH AT THE BRANCH**



LEGEND

Peak Flood Depth (m)

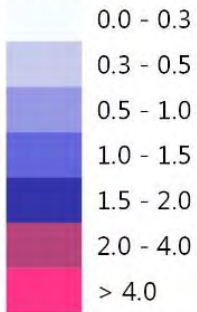
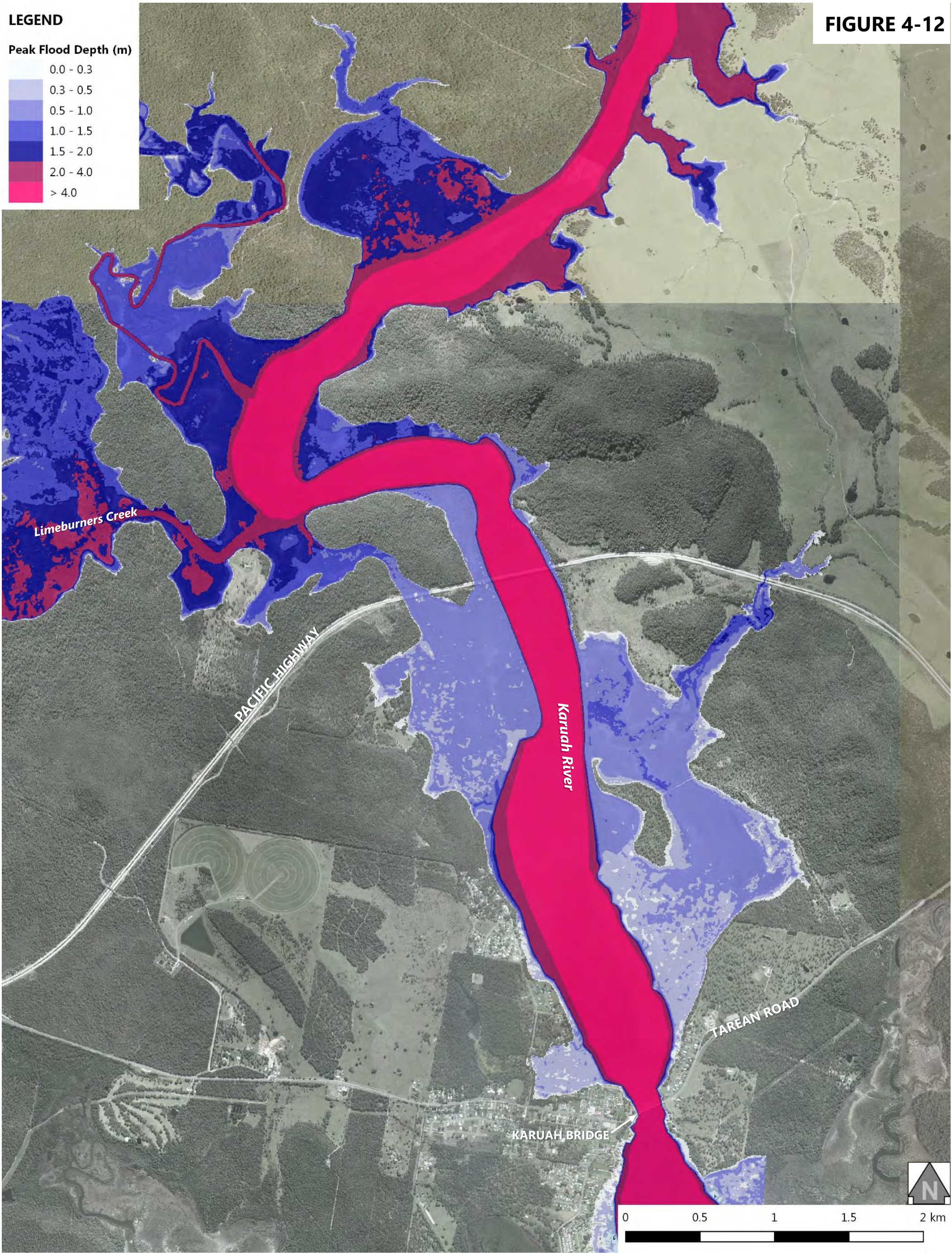


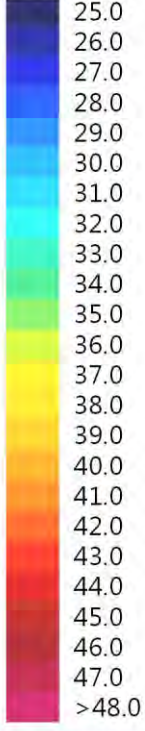
FIGURE 4-12



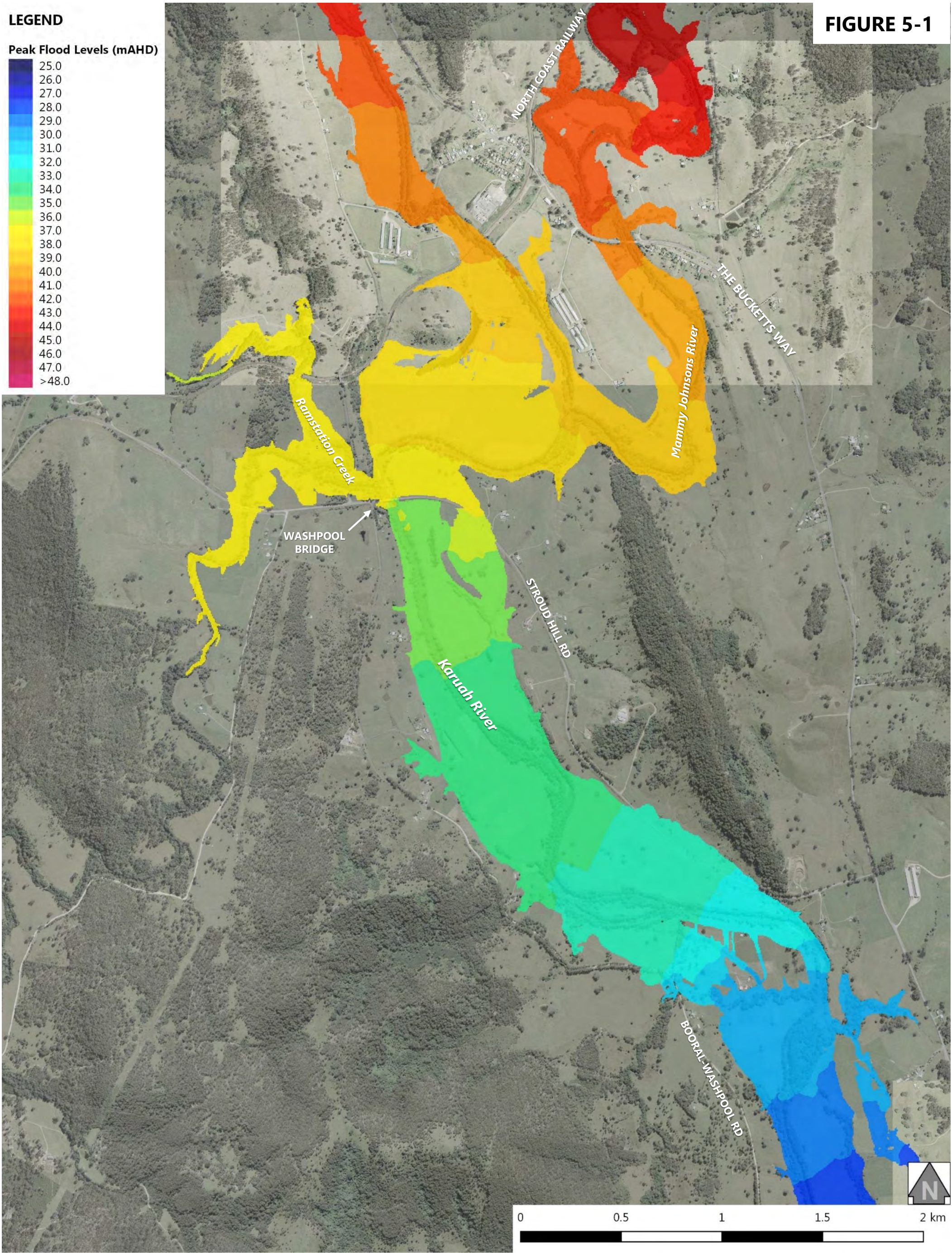


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 5-1**





LEGEND

Peak Flood Levels (mAHD)

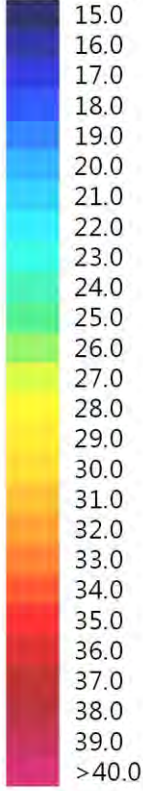
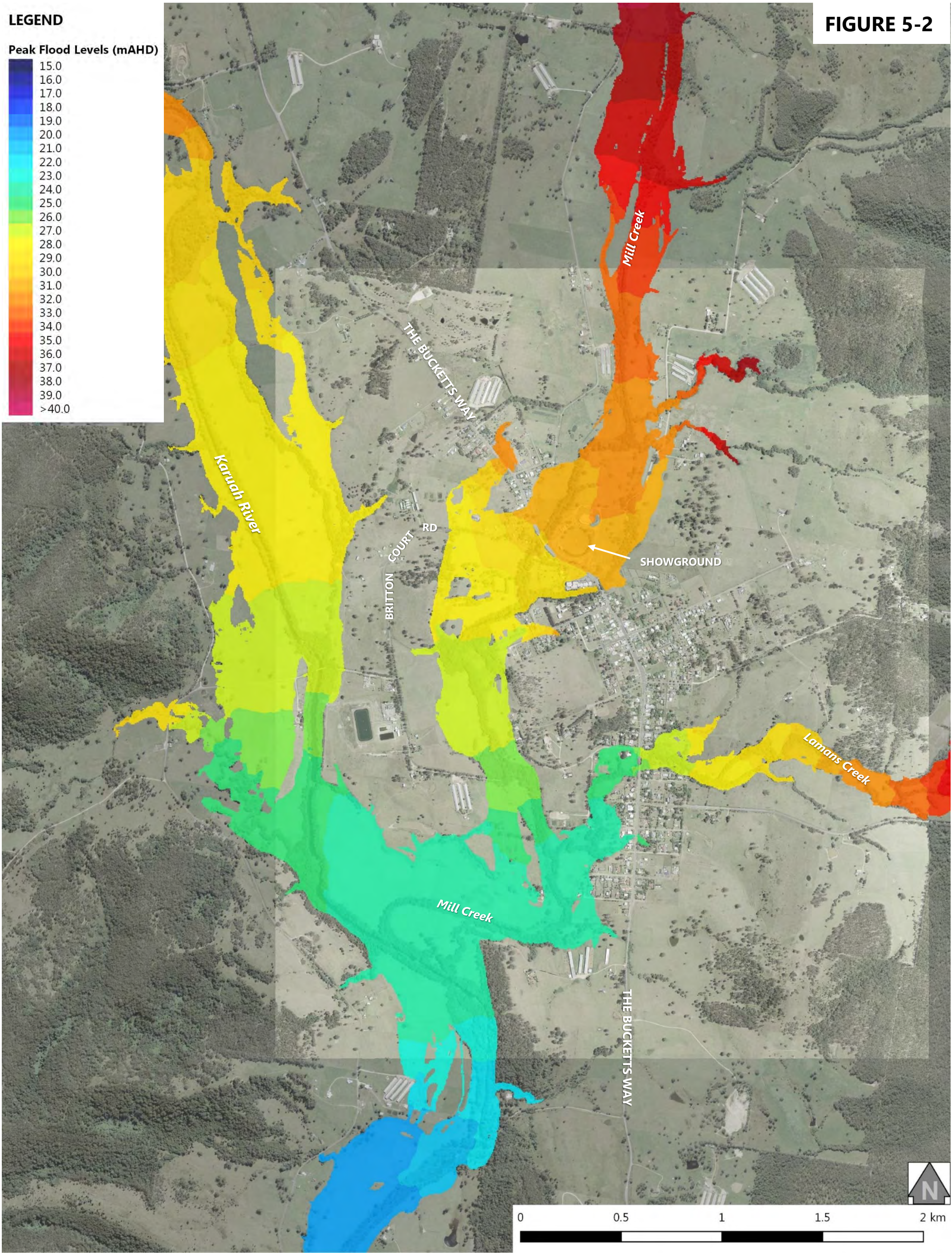


FIGURE 5-2





LEGEND

Peak Flood Levels (mAHD)

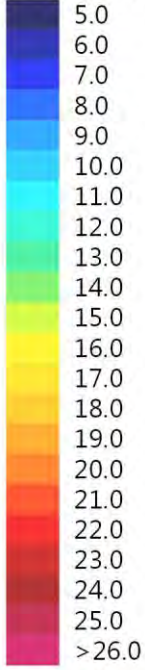
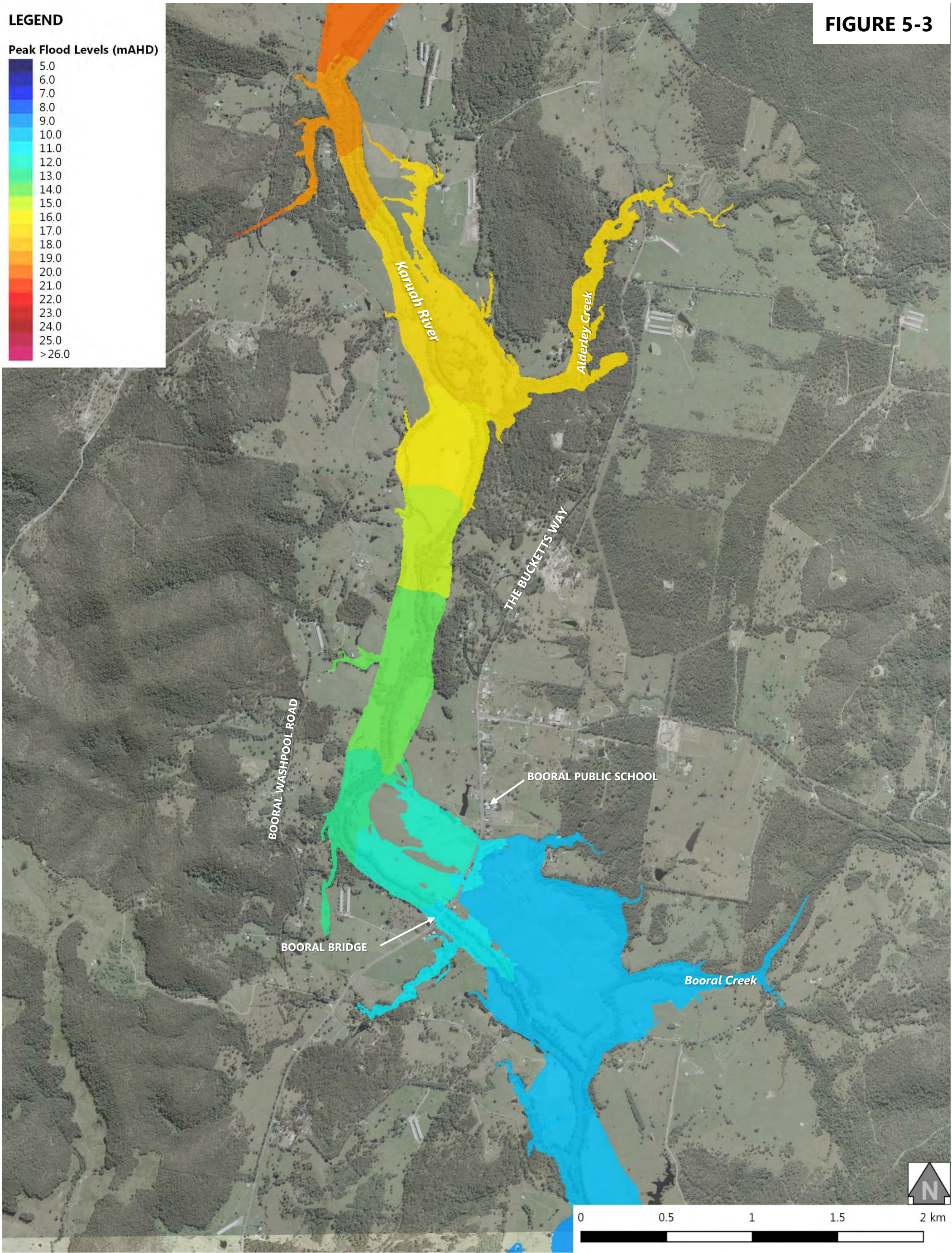


FIGURE 5-3





LEGEND

Peak Flood Levels (mAHD)

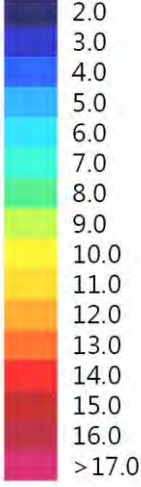


FIGURE 5-4

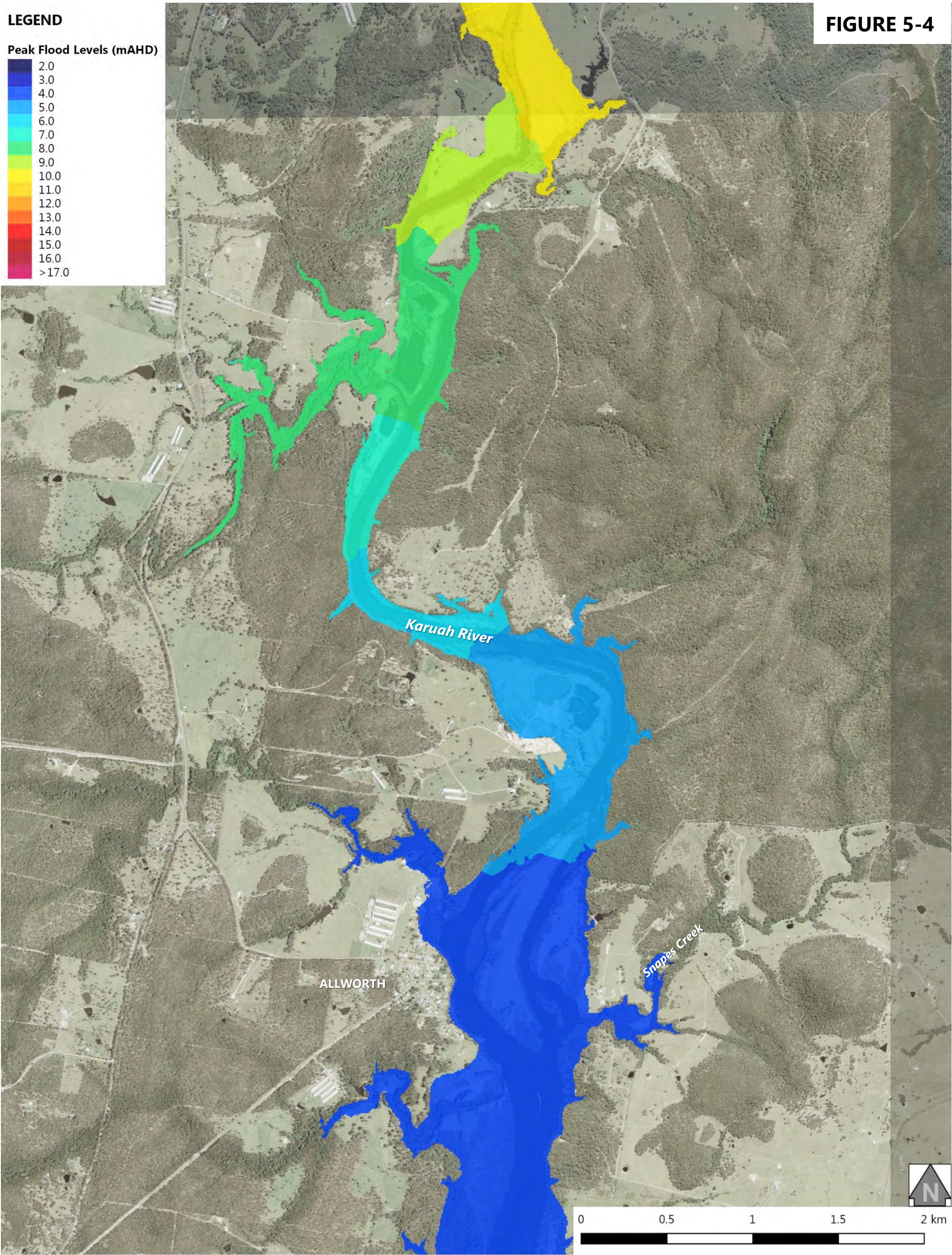
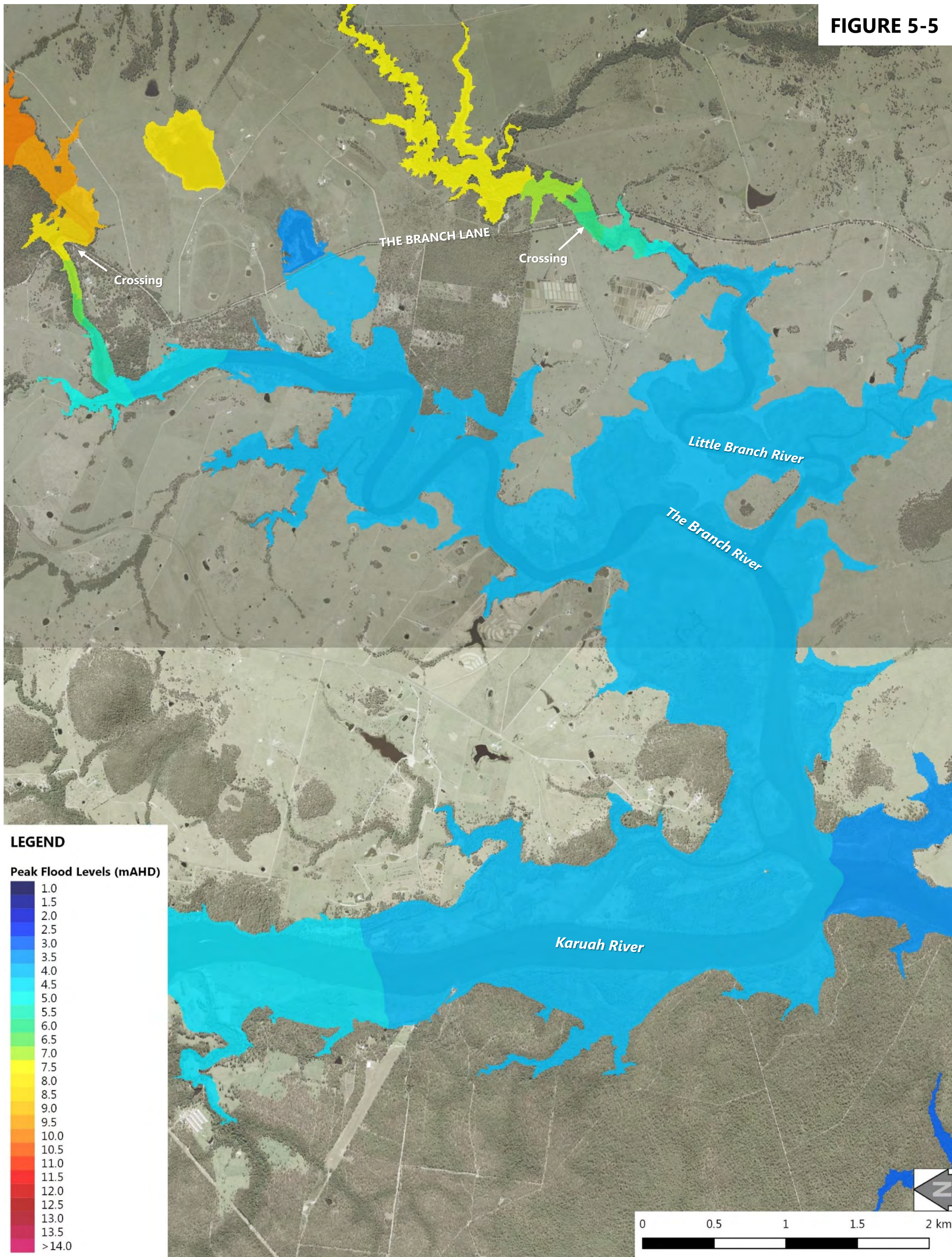




FIGURE 5-5



**Advisian**

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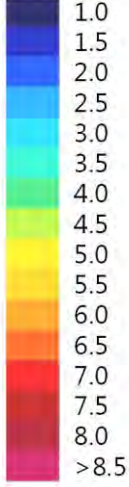
301015-03792 – Karuah River and Stroud Flood Study Update – Volume 2  
Flood Mapping\_A3\_Portrait\_1% AEP\_RevA.pdf

**1% AEP DESIGN FLOOD EVENT  
PEAK FLOOD LEVELS AT THE BRANCH**

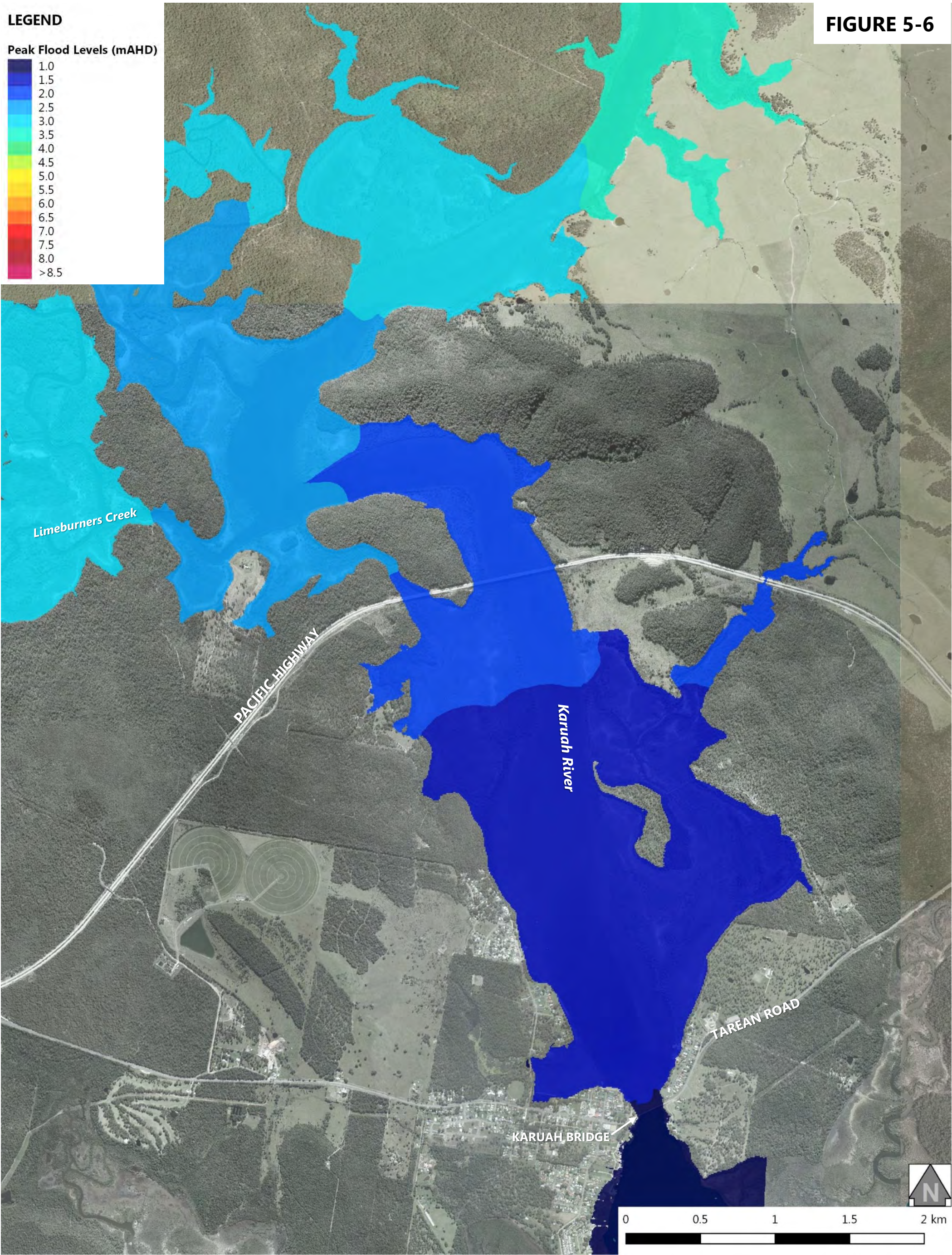


**LEGEND**

Peak Flood Levels (mAHD)



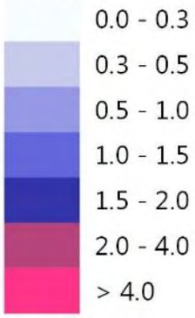
**FIGURE 5-6**



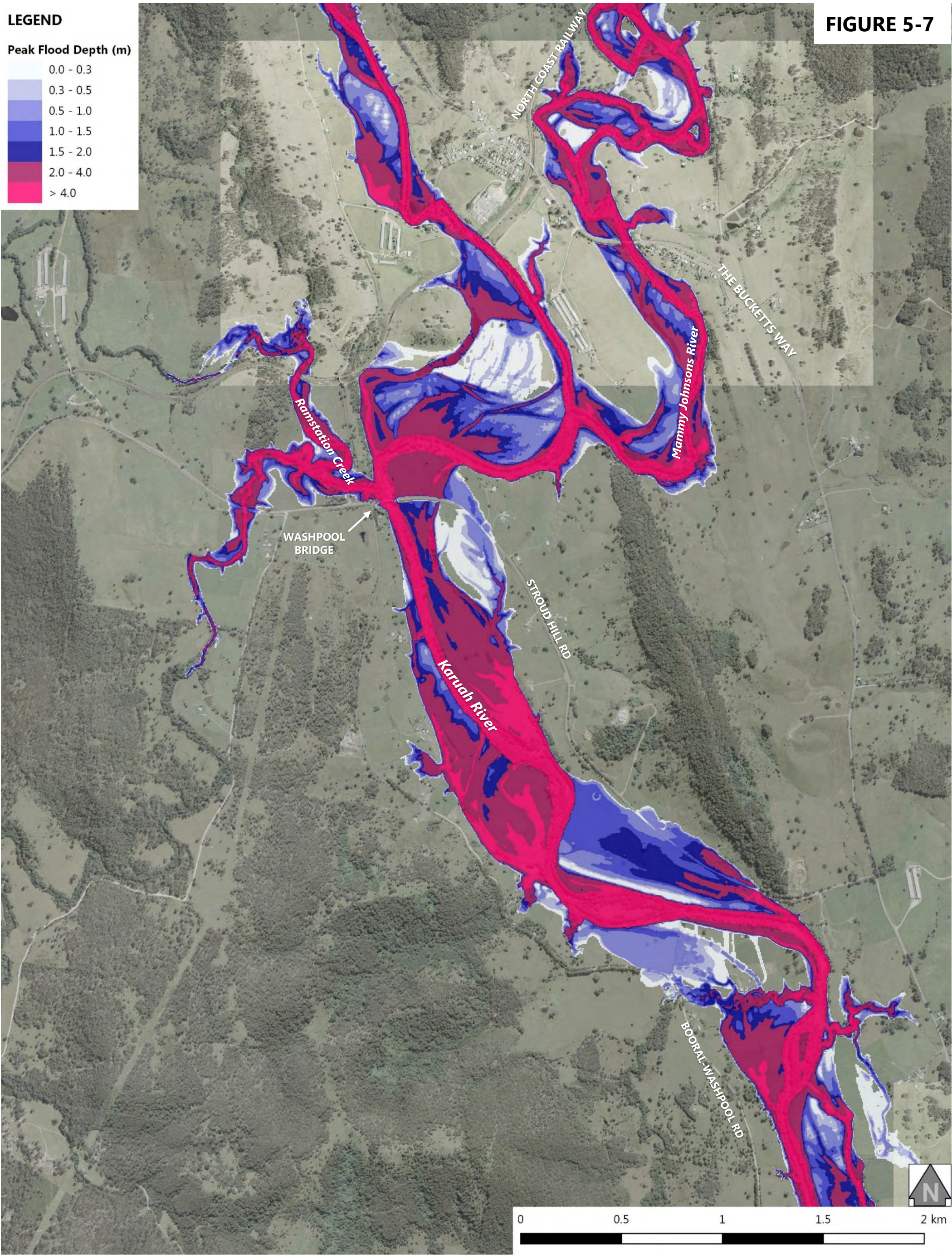


**LEGEND**

**Peak Flood Depth (m)**



**FIGURE 5-7**





LEGEND

Peak Flood Depth (m)

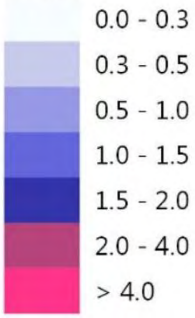
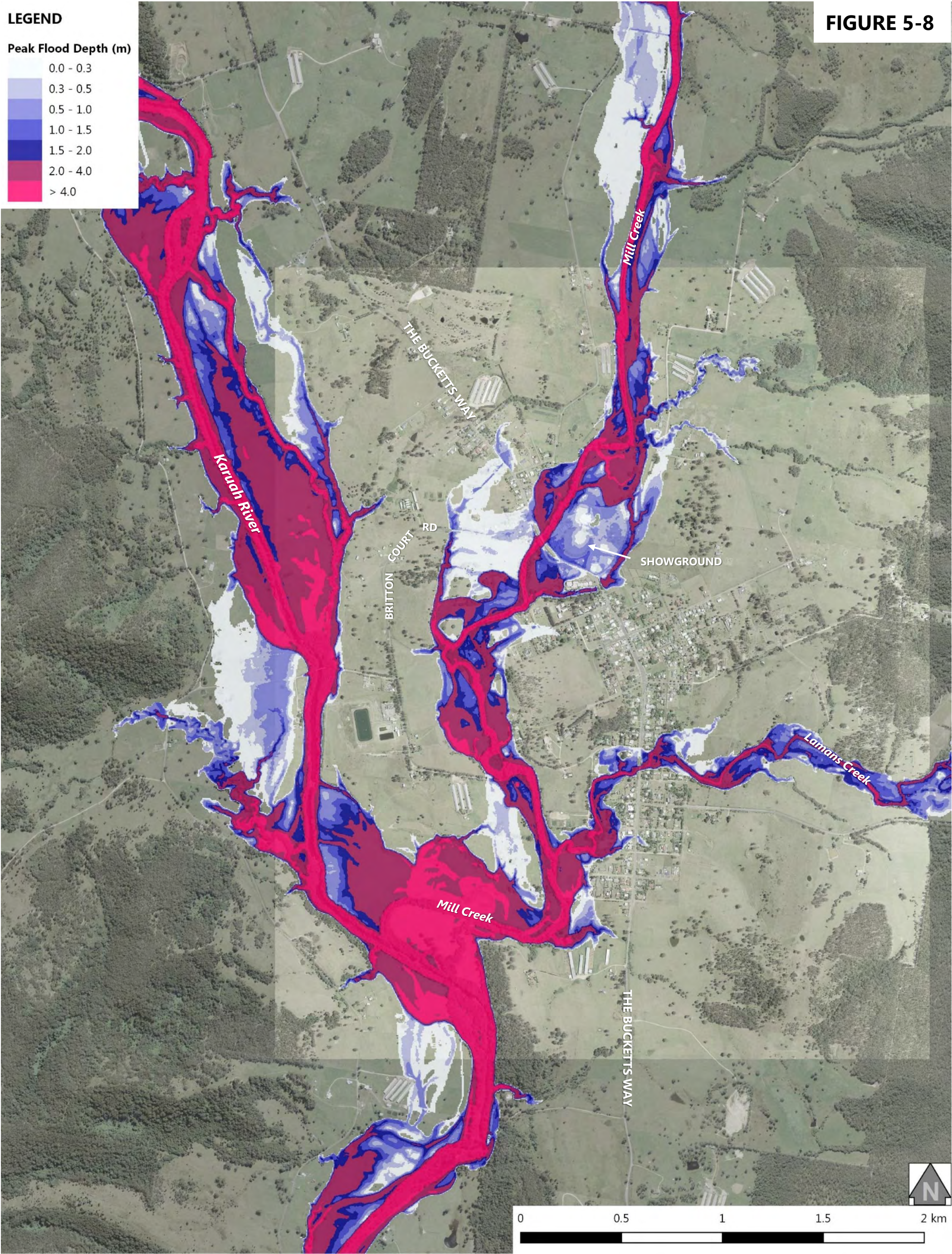


FIGURE 5-8





LEGEND

Peak Flood Depth (m)

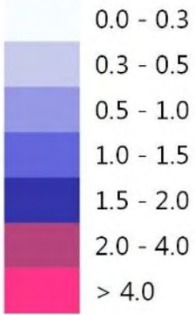
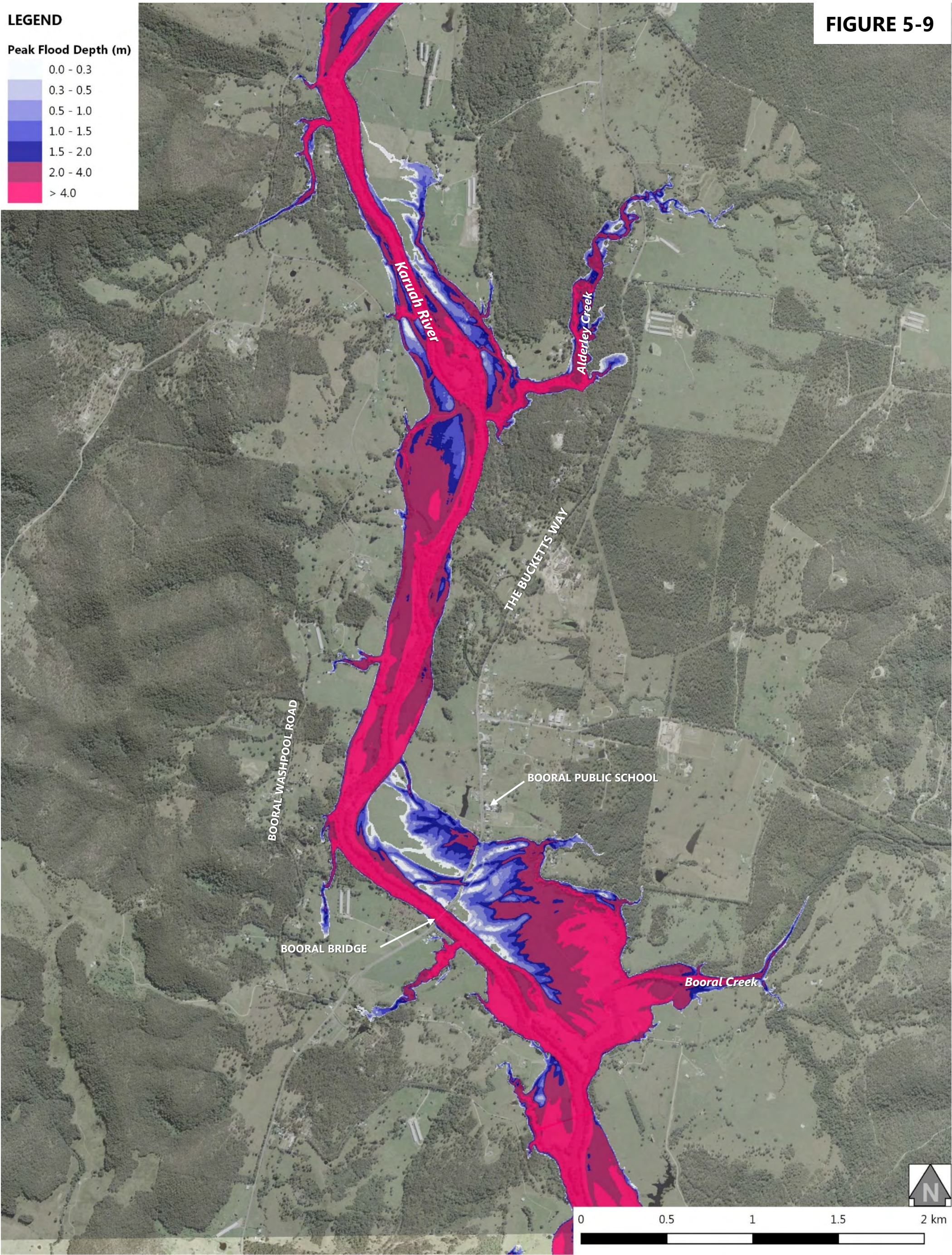


FIGURE 5-9





LEGEND

Peak Flood Depth (m)

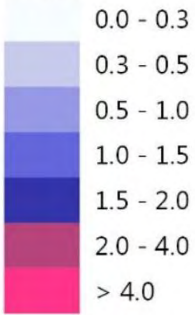
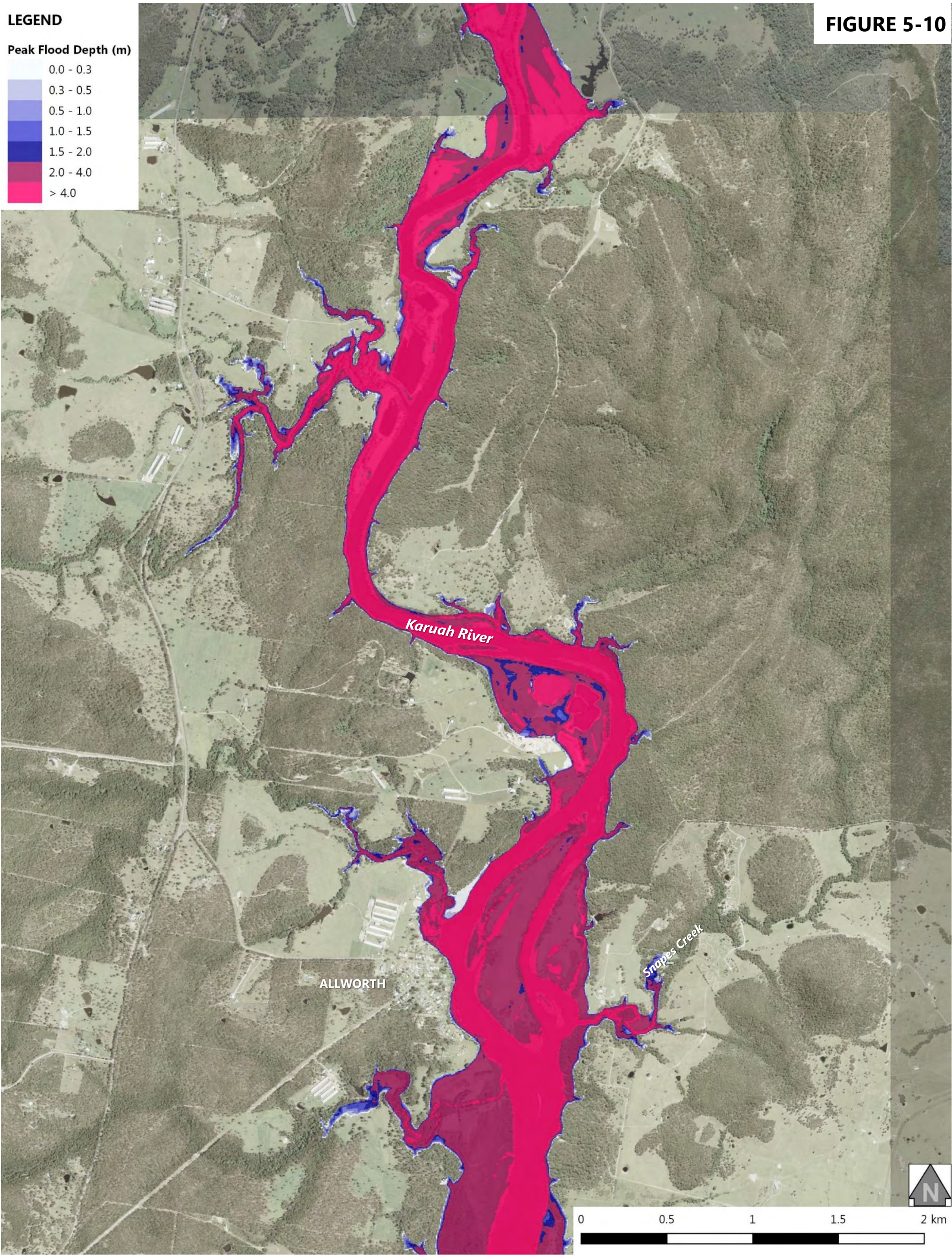
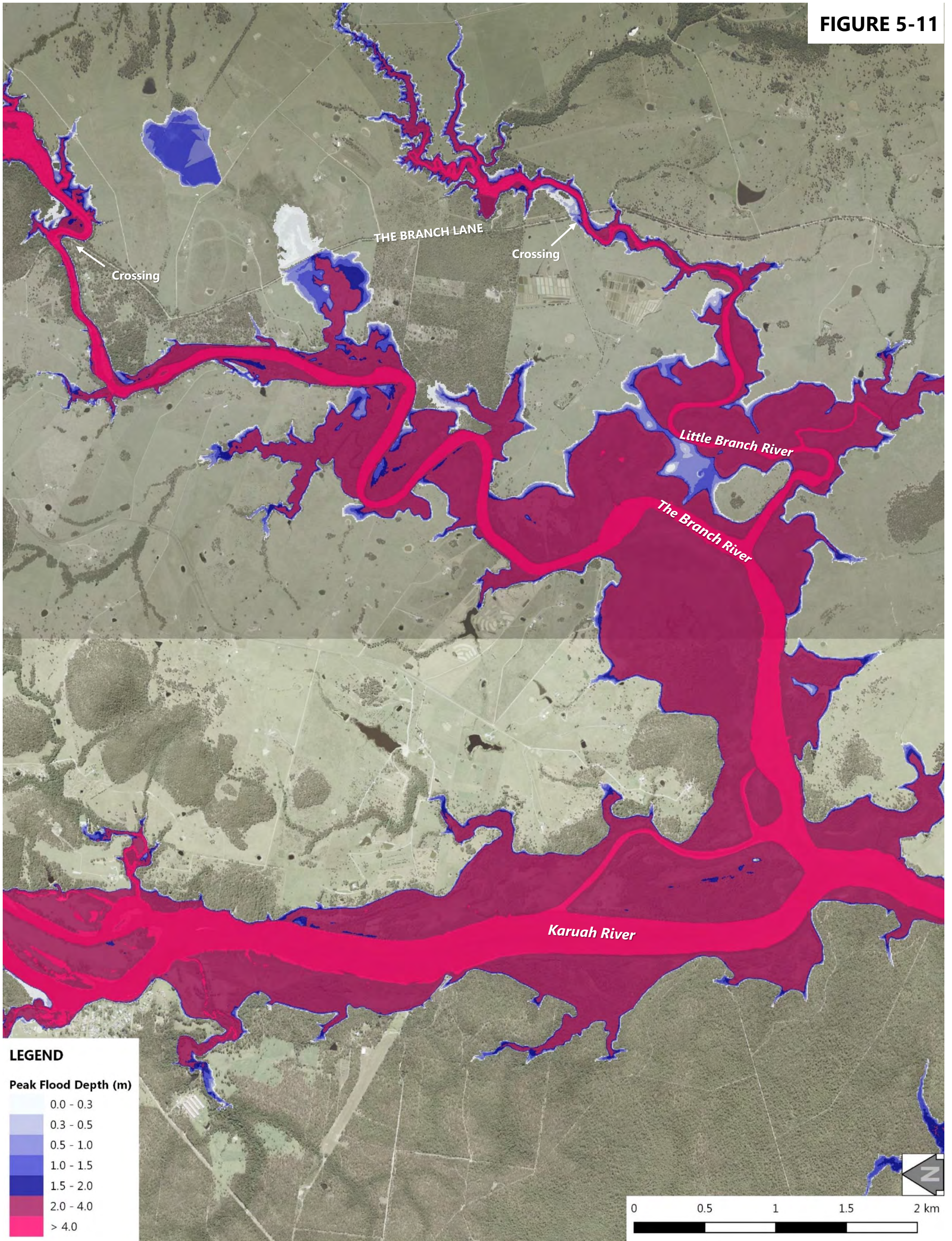


FIGURE 5-10





**FIGURE 5-11**



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Flood Mapping\_A3\_Portrait\_1% AEP\_RevA.pdf

**1% AEP DESIGN FLOOD EVENT  
PEAK FLOOD DEPTH AT THE BRANCH**



LEGEND

Peak Flood Depth (m)

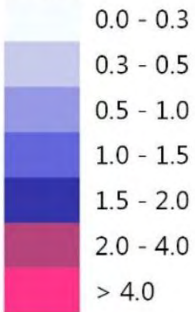
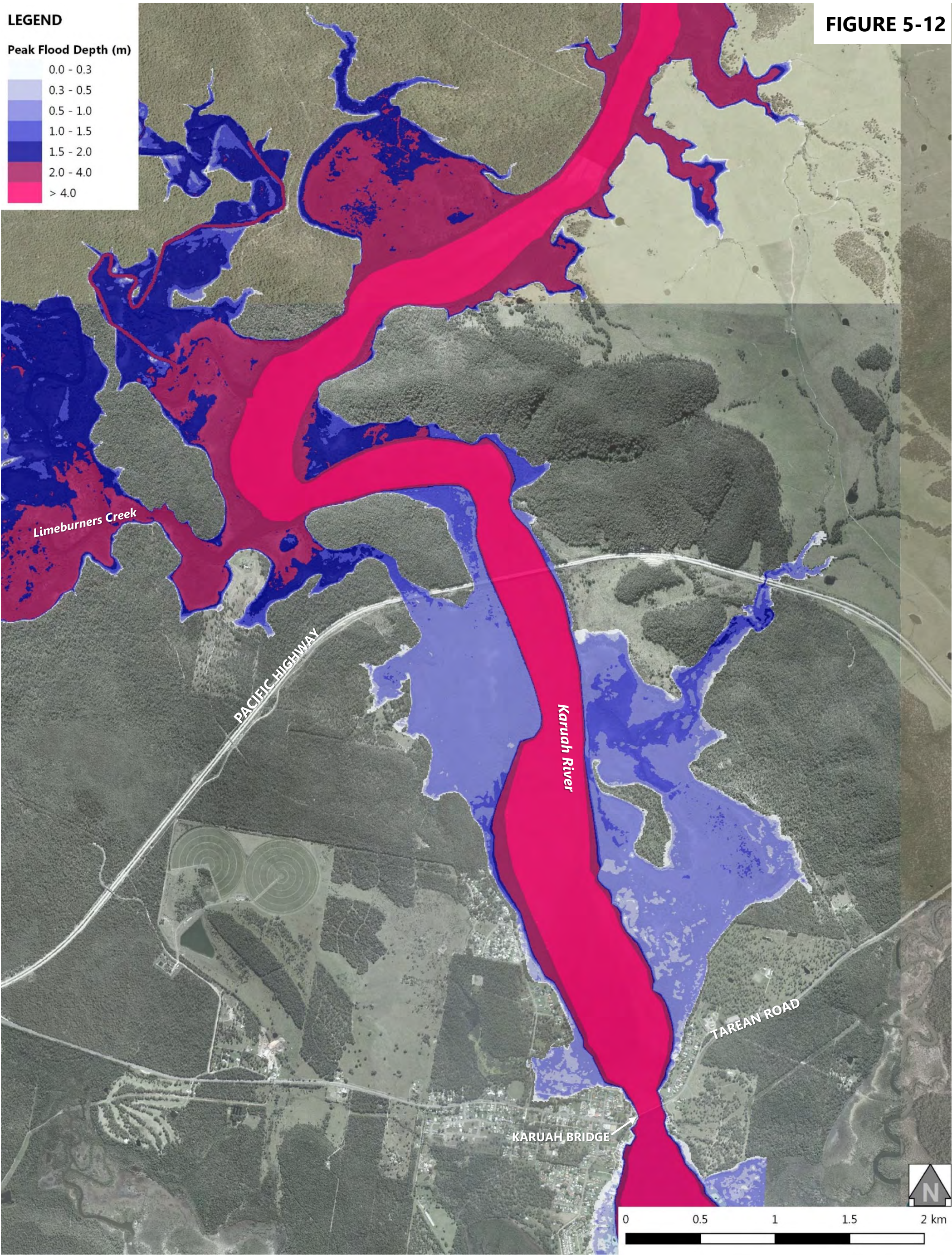


FIGURE 5-12





LEGEND

Peak Flood Velocity (m/s)

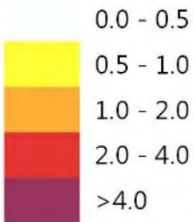
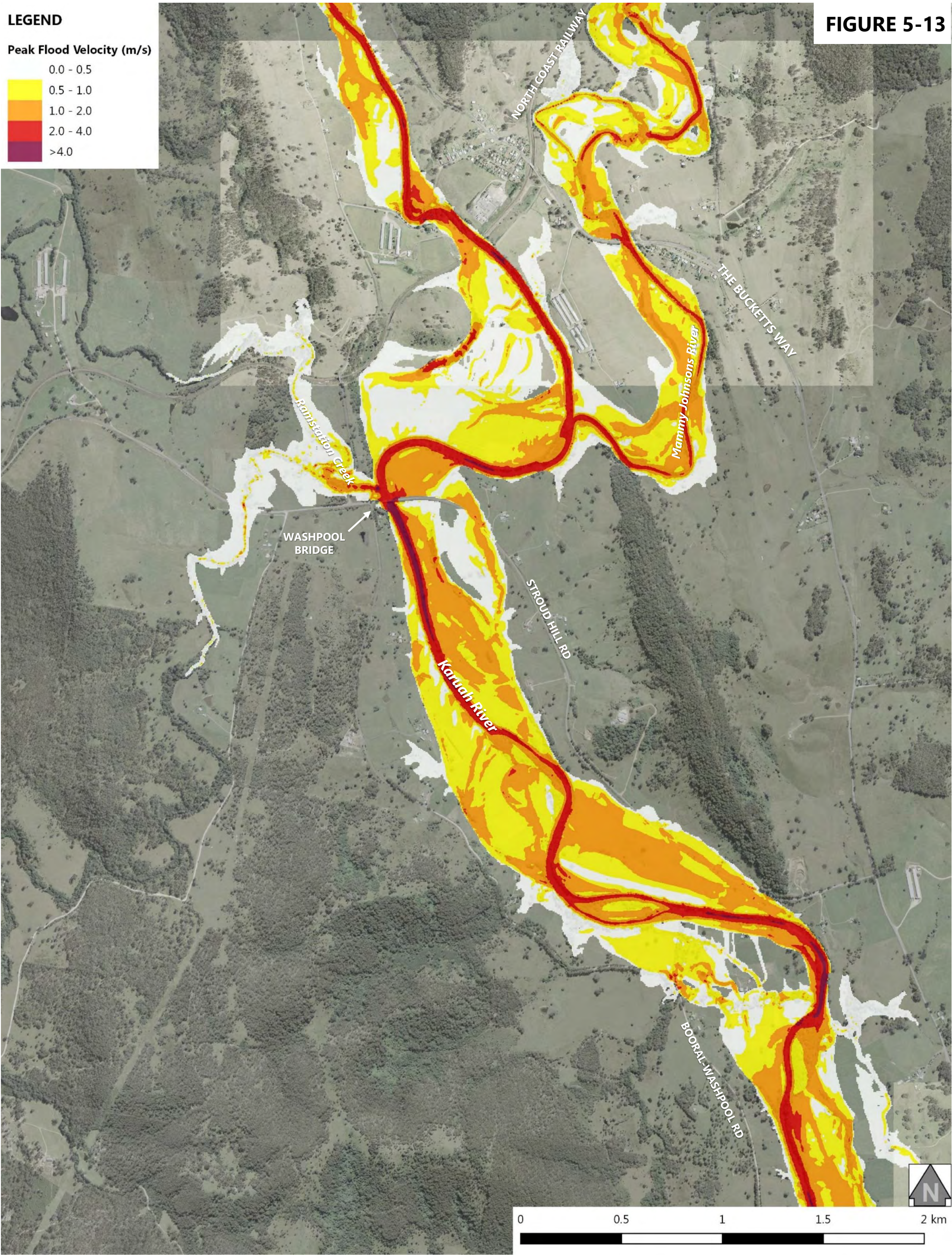


FIGURE 5-13





LEGEND

Peak Flood Velocity (m/s)

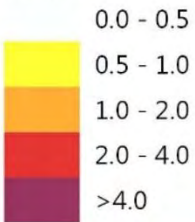
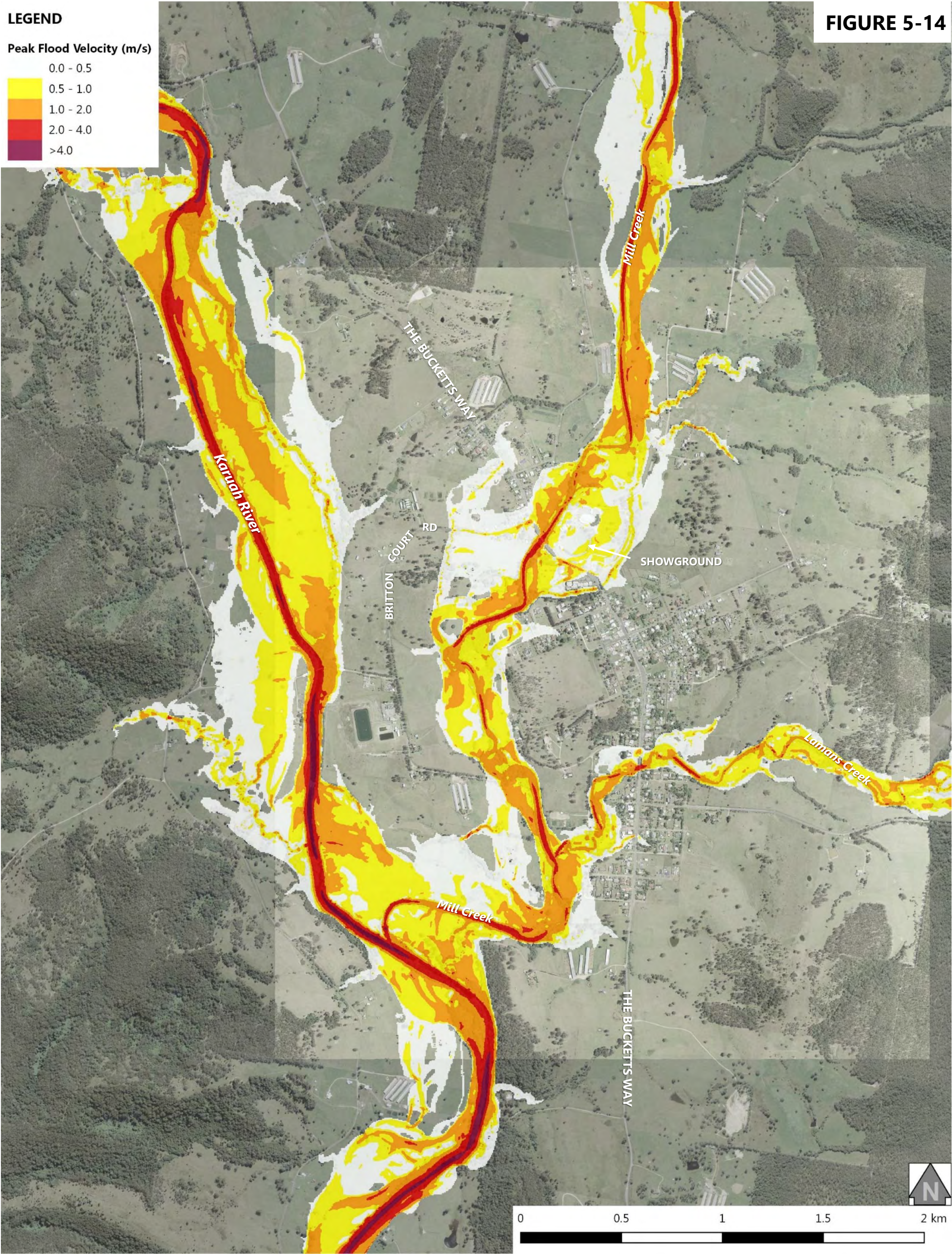


FIGURE 5-14





LEGEND

Peak Flood Velocity (m/s)

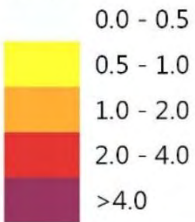
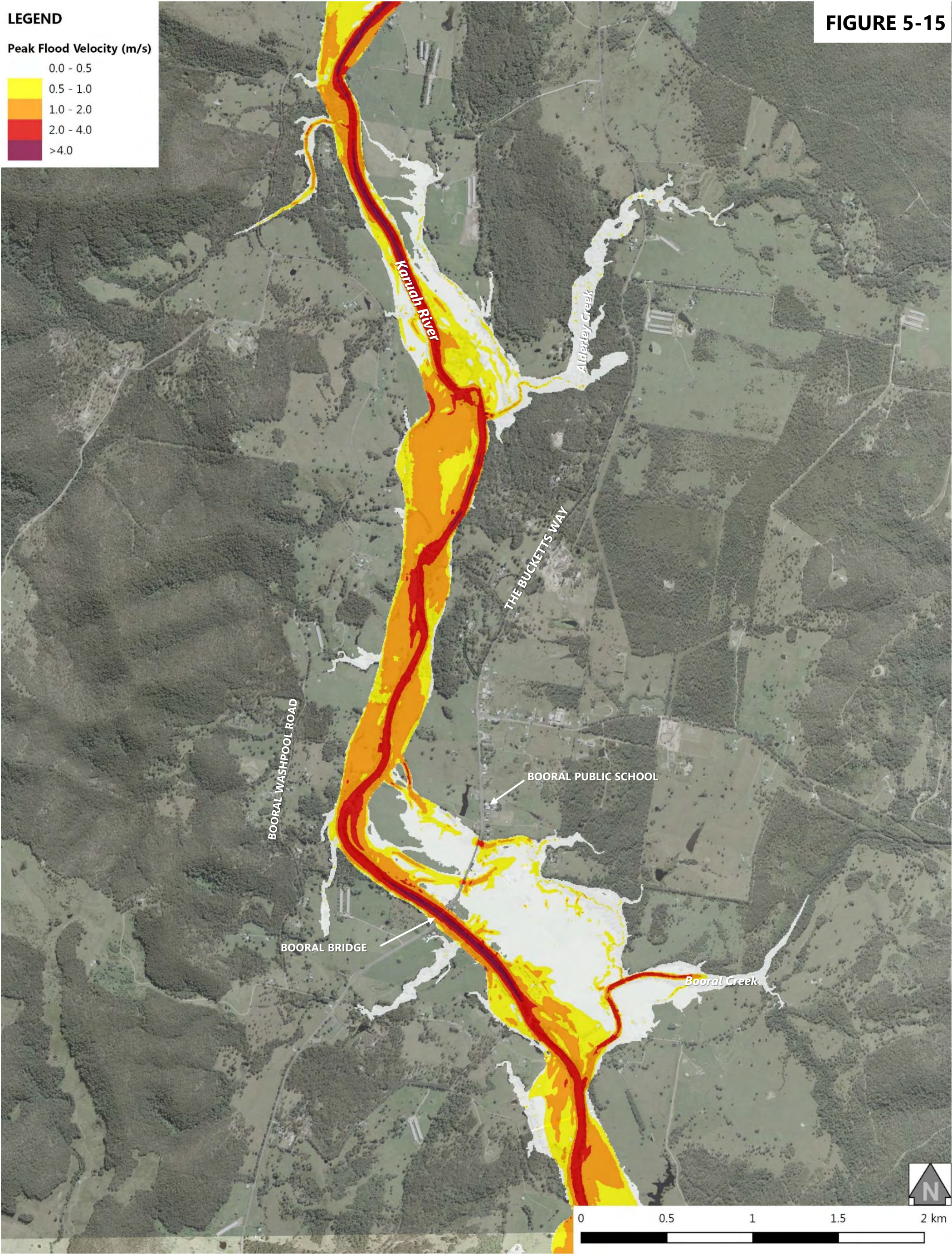


FIGURE 5-15





LEGEND

Peak Flood Velocity (m/s)

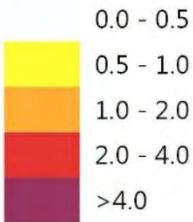
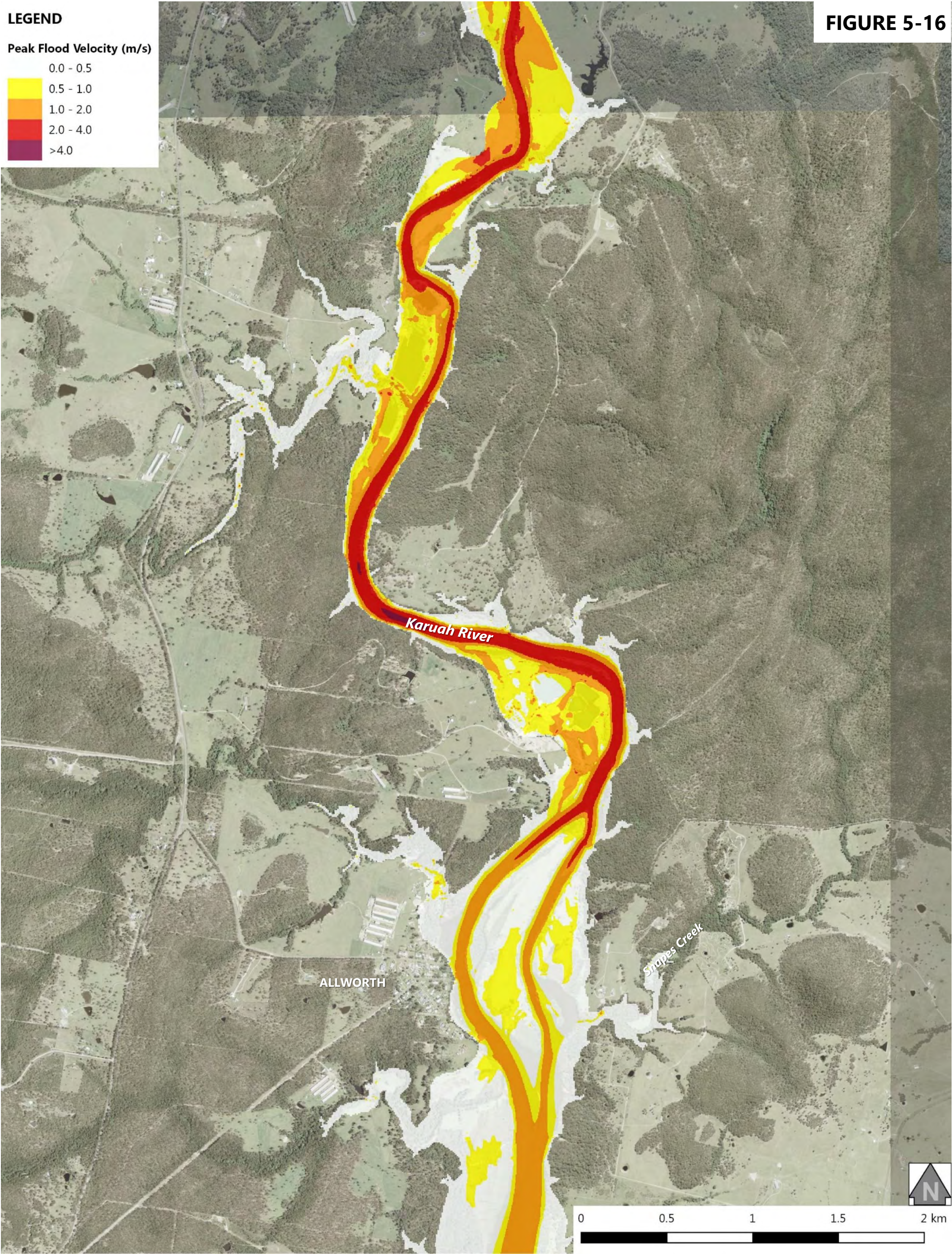


FIGURE 5-16

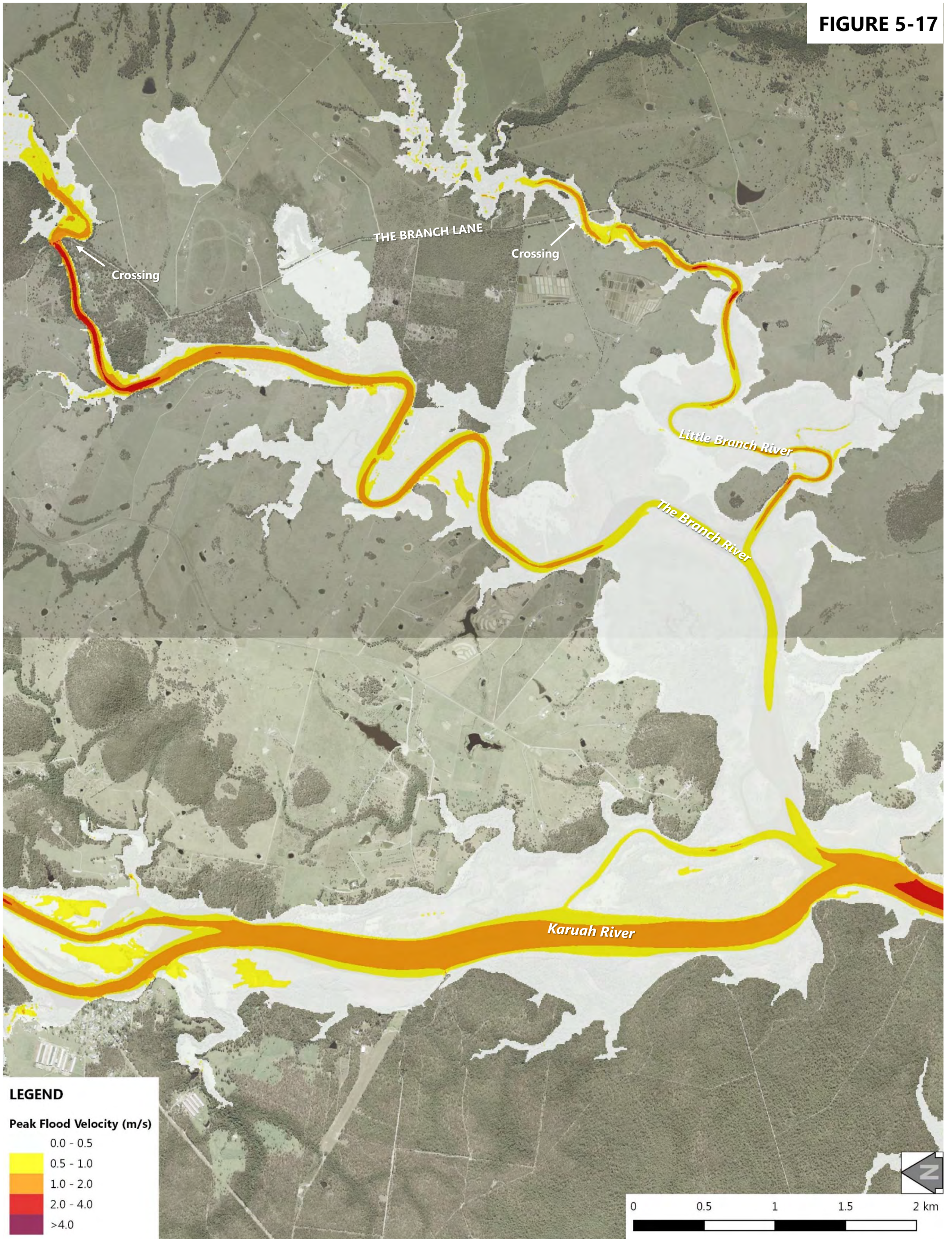


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FIGURE 5-17



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Flood Mapping\_A3\_Portrait\_1%AEP\_RevA.pdf

**1% AEP DESIGN FLOOD EVENT  
PEAK FLOOD VELOCITY AT THE BRANCH**



LEGEND

Peak Flood Velocity (m/s)

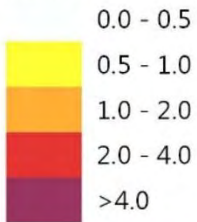


FIGURE 5-18



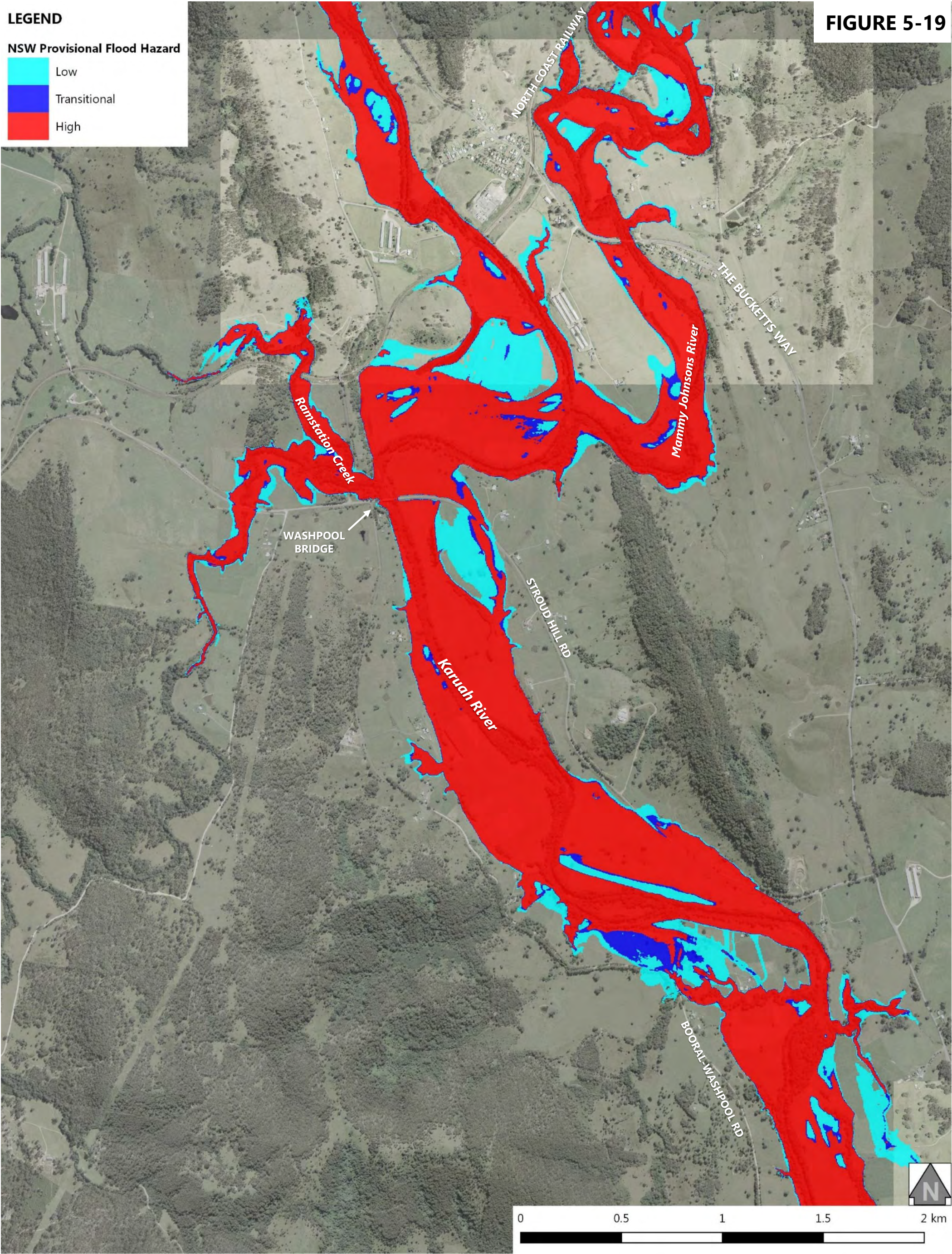


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 5-19



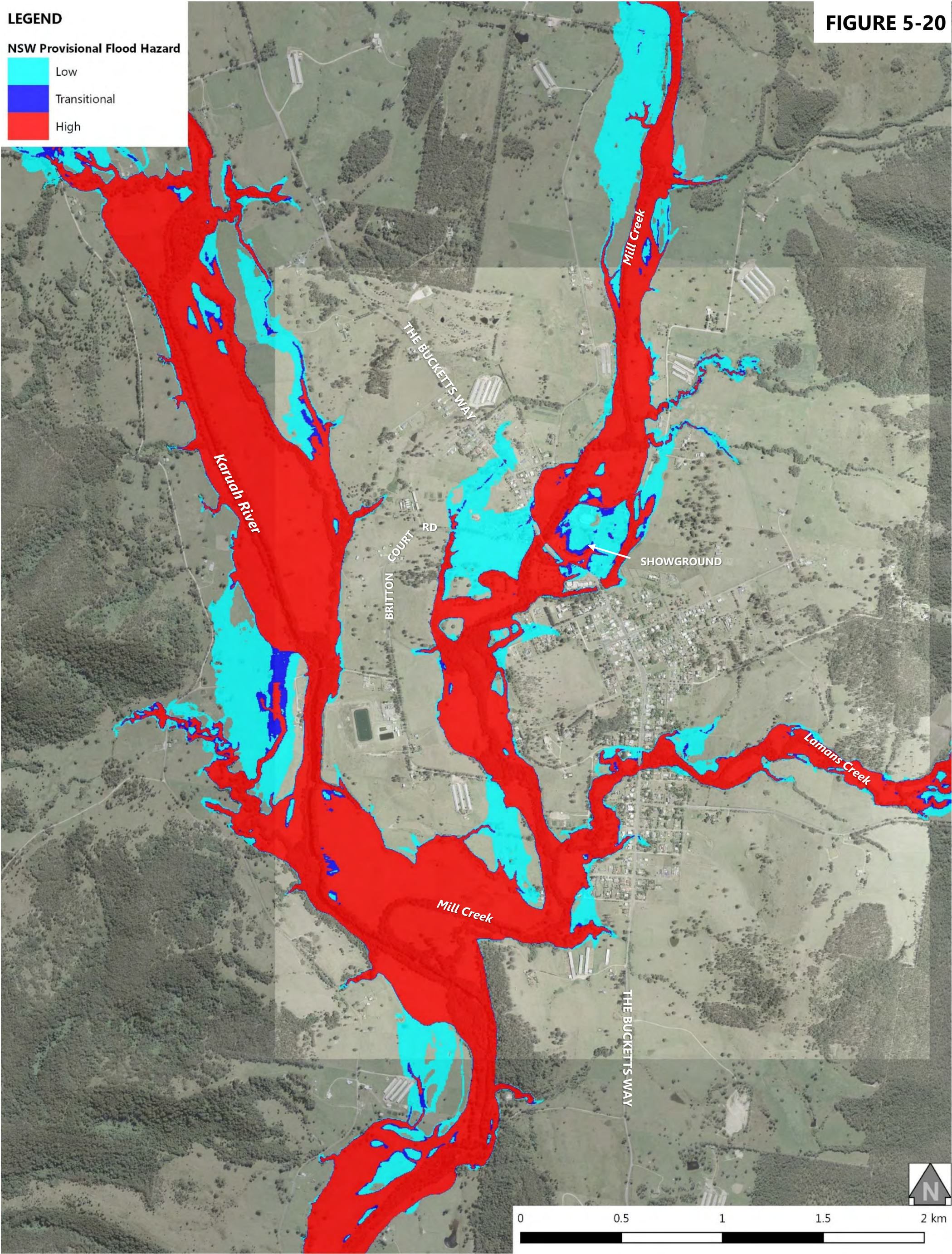


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 5-20



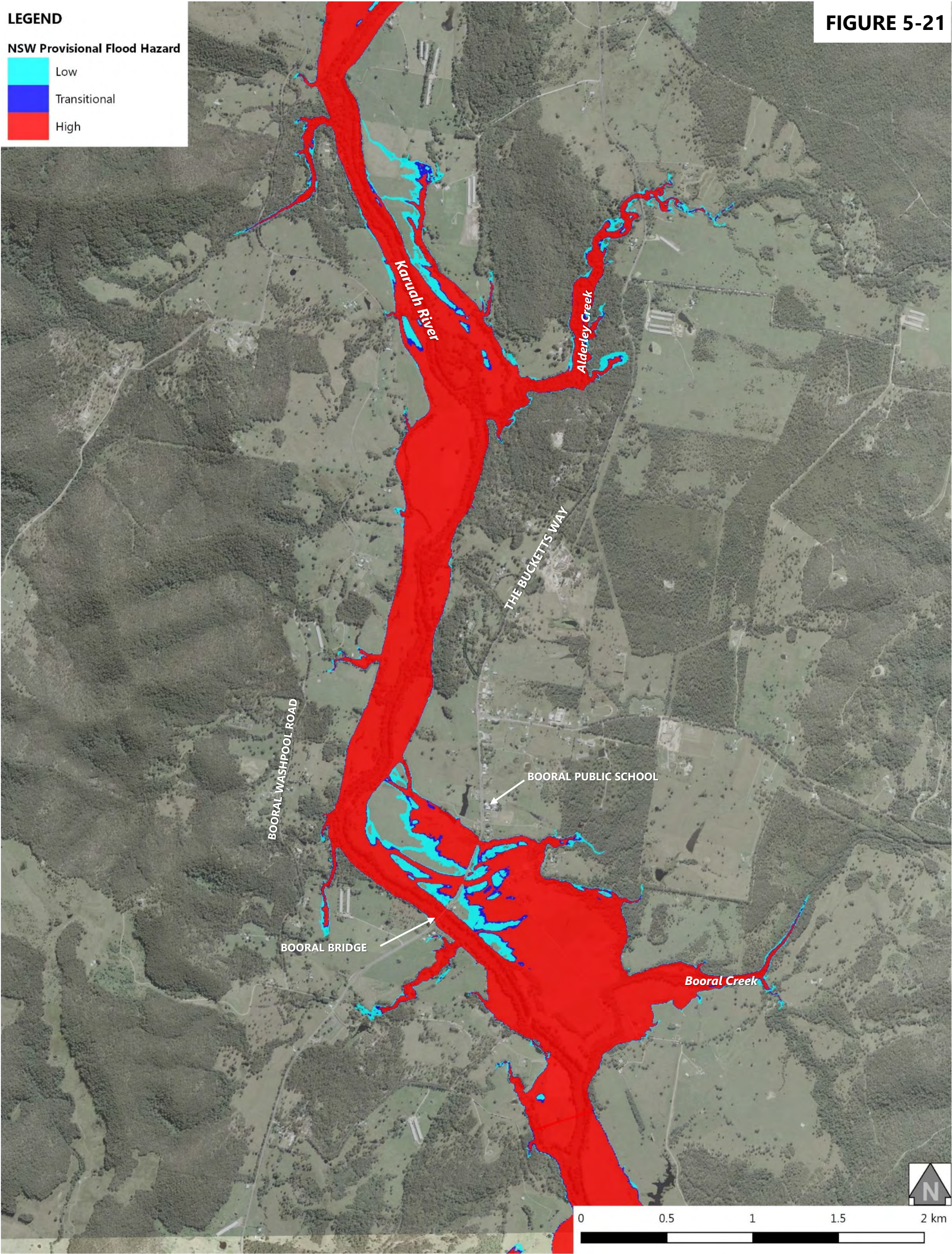


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 5-21





LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 5-22

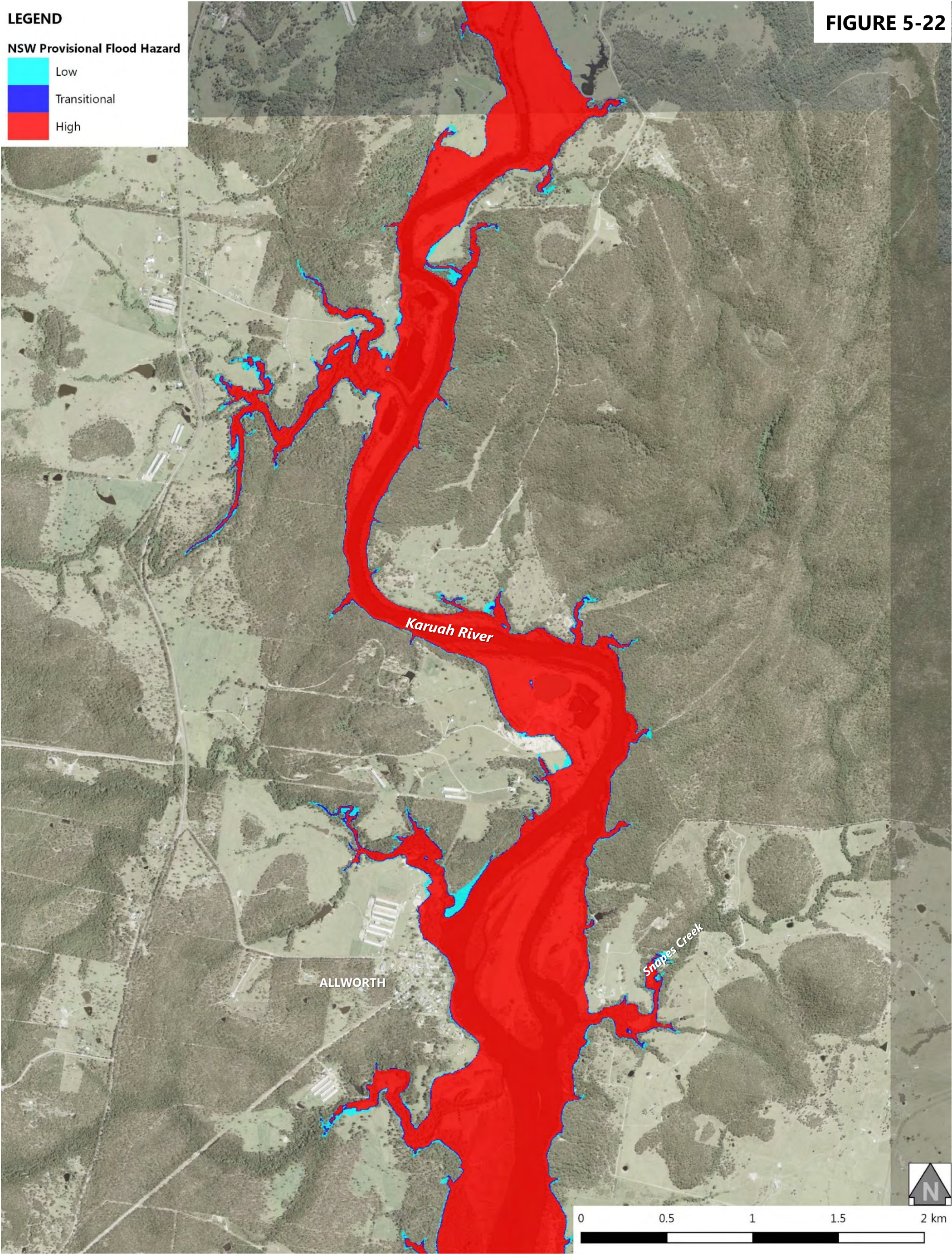
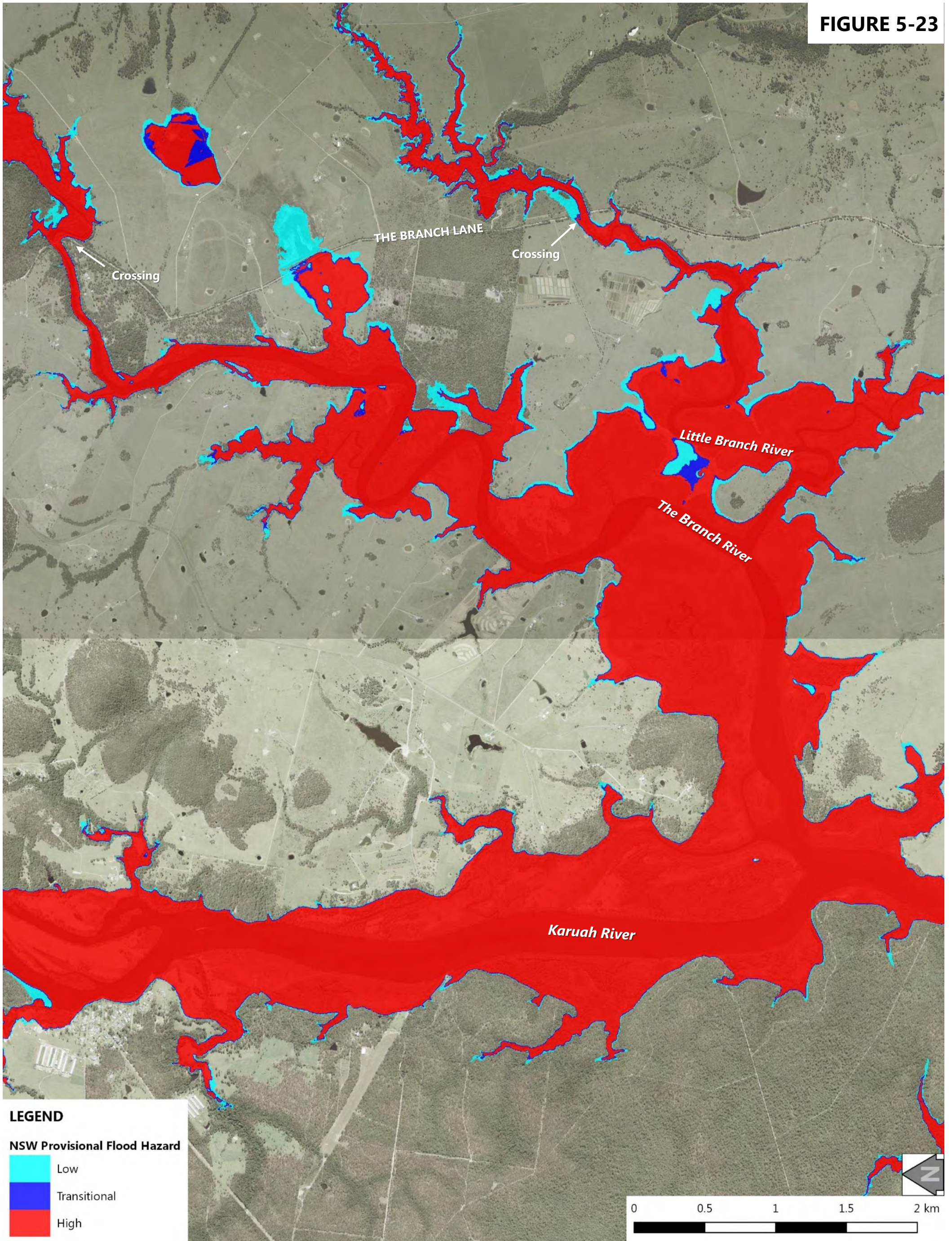




FIGURE 5-23



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301015-03792 – Karuah River and Stroud Flood Study Update – Volume 2  
Flood Mapping\_A3\_Portrait\_1%AEP\_RevA.pdf

**1% AEP DESIGN FLOOD EVENT**  
**NSW PROVISIONAL FLOOD HAZARD AT THE BRANCH**

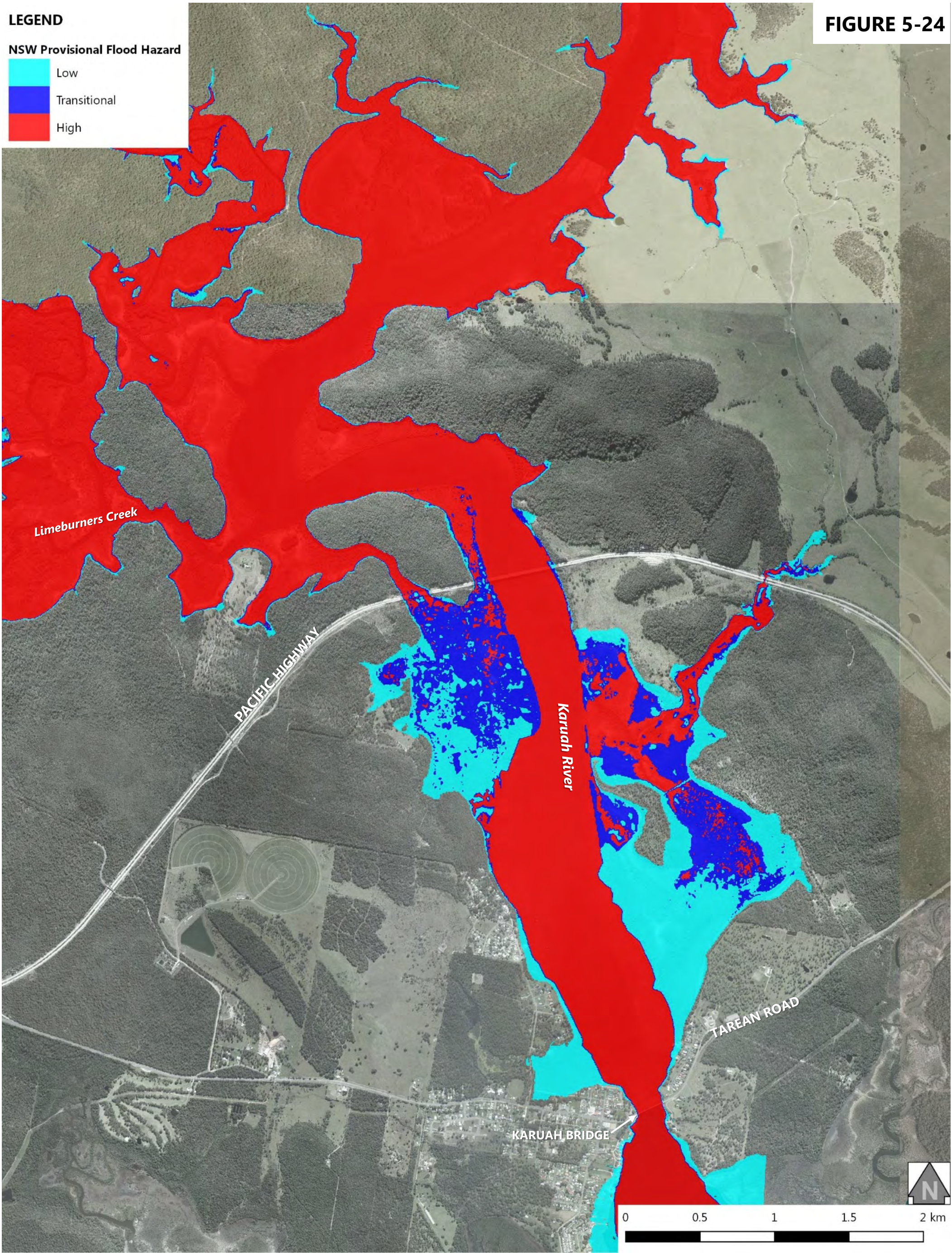


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 5-24



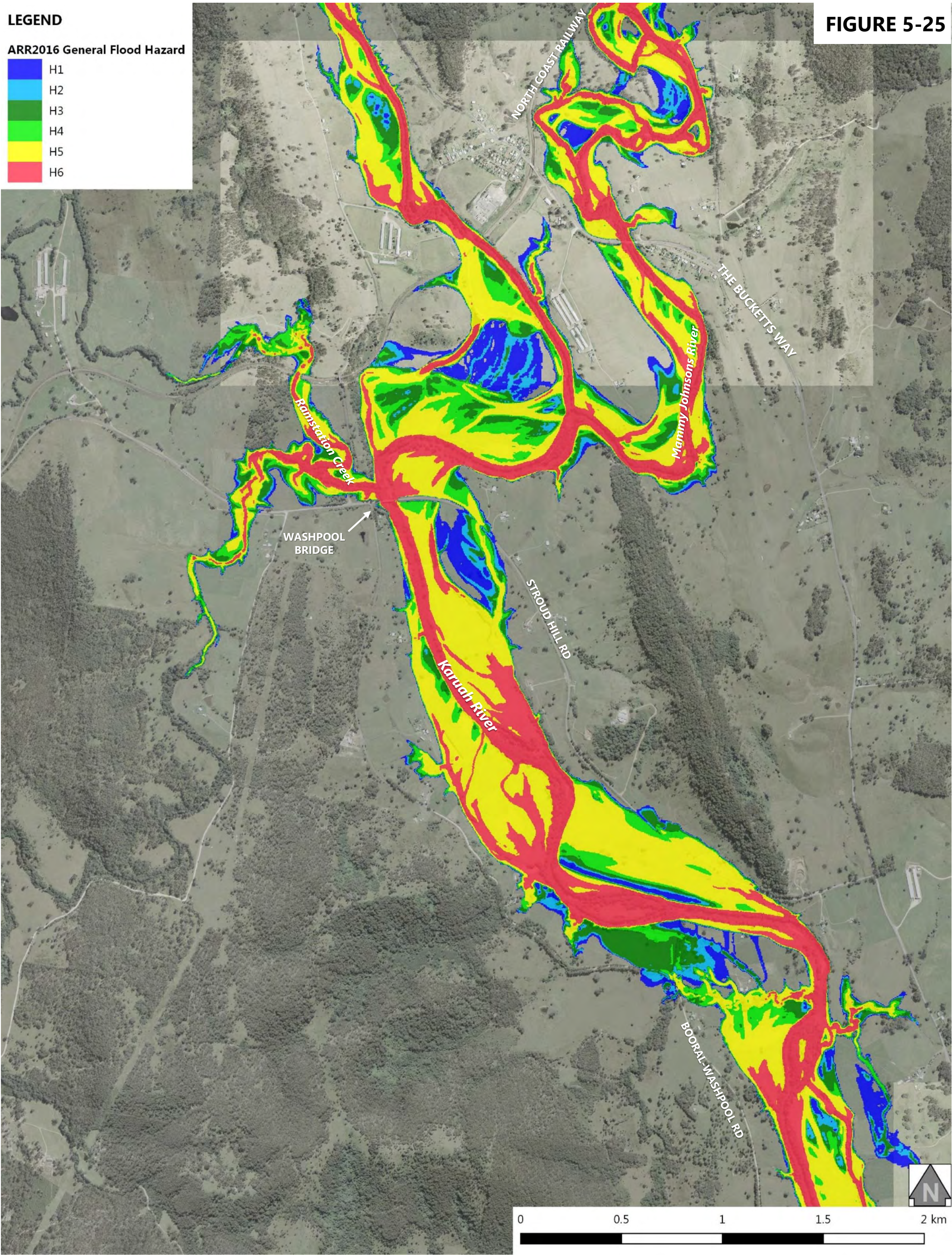


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 5-25



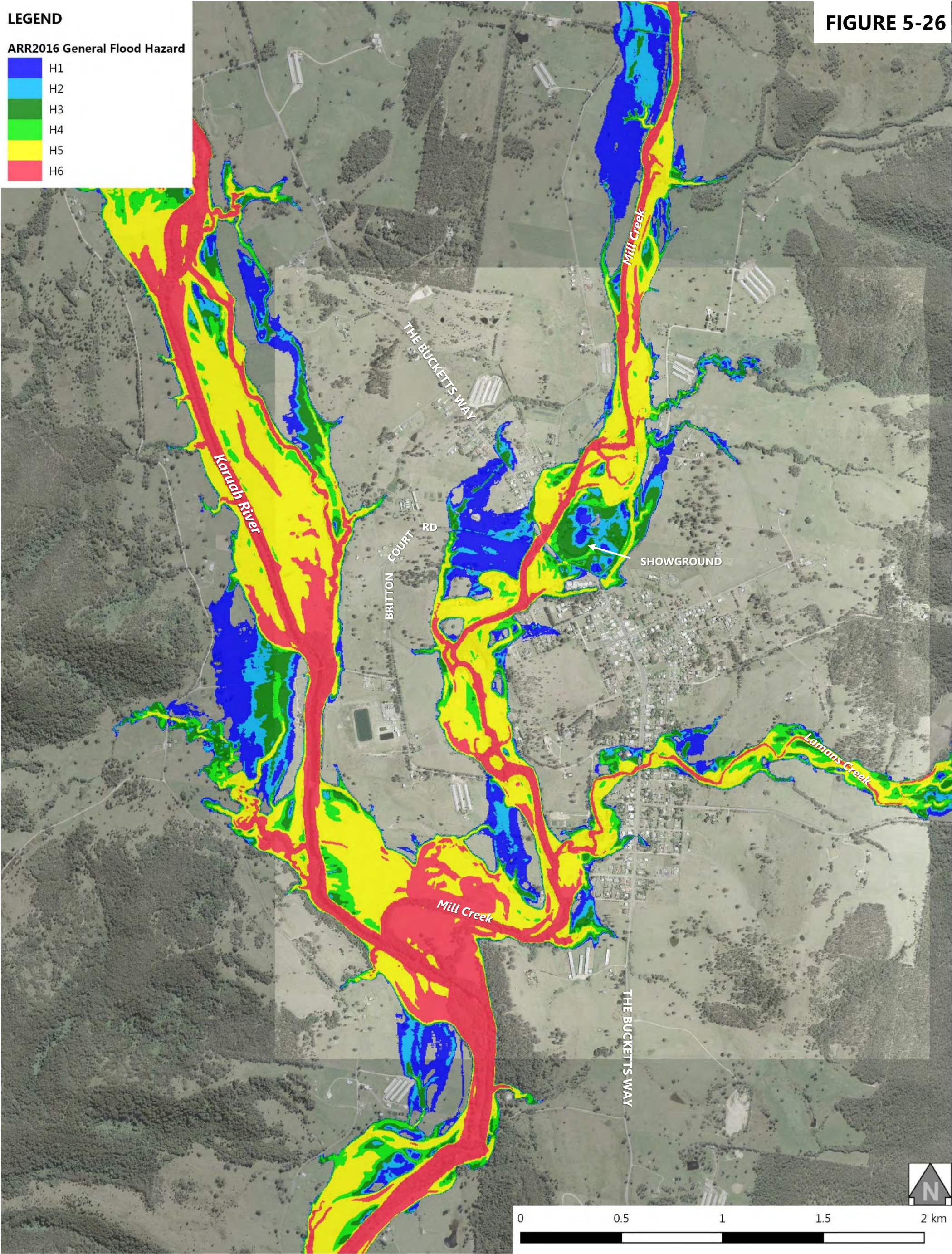


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 5-26



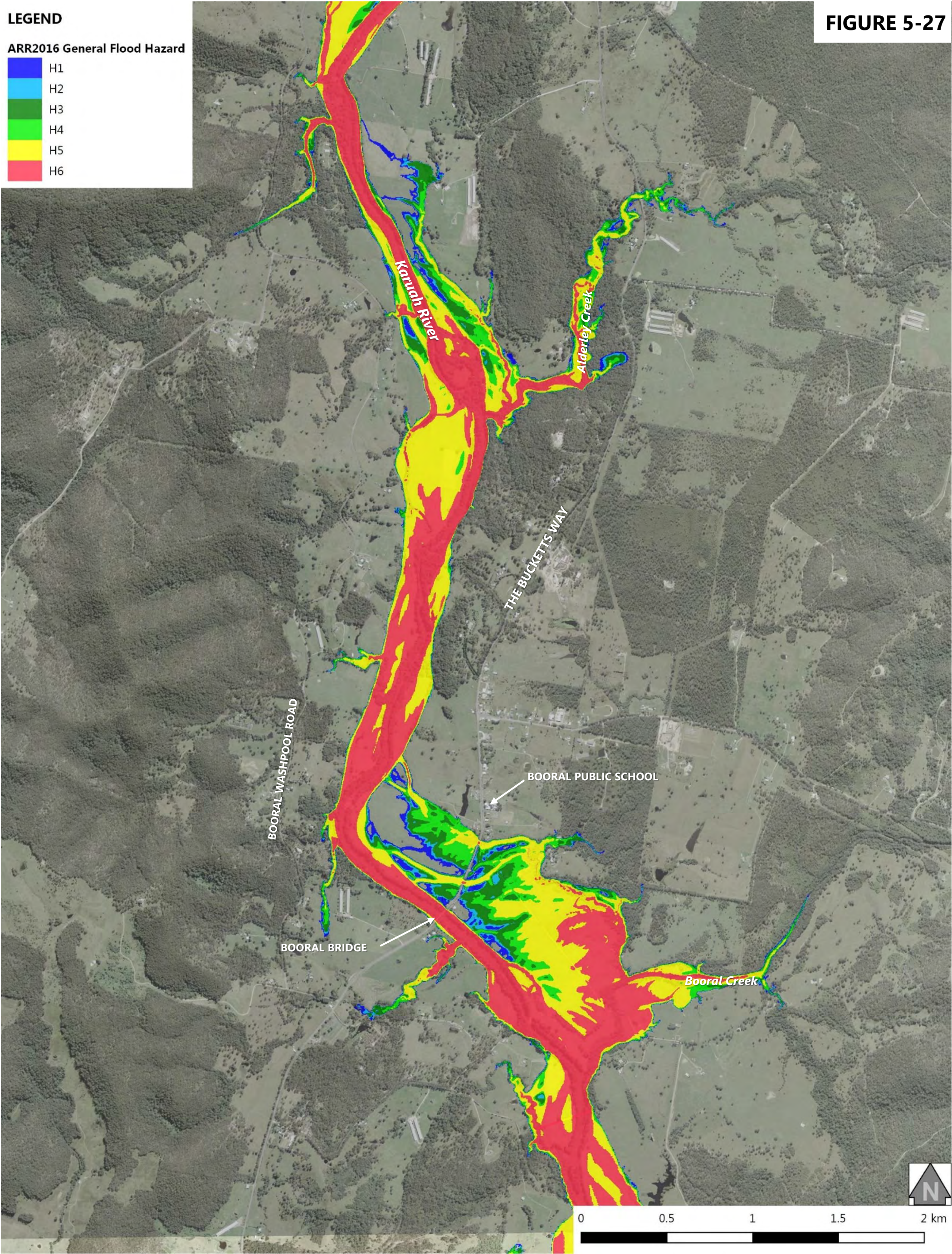


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 5-27



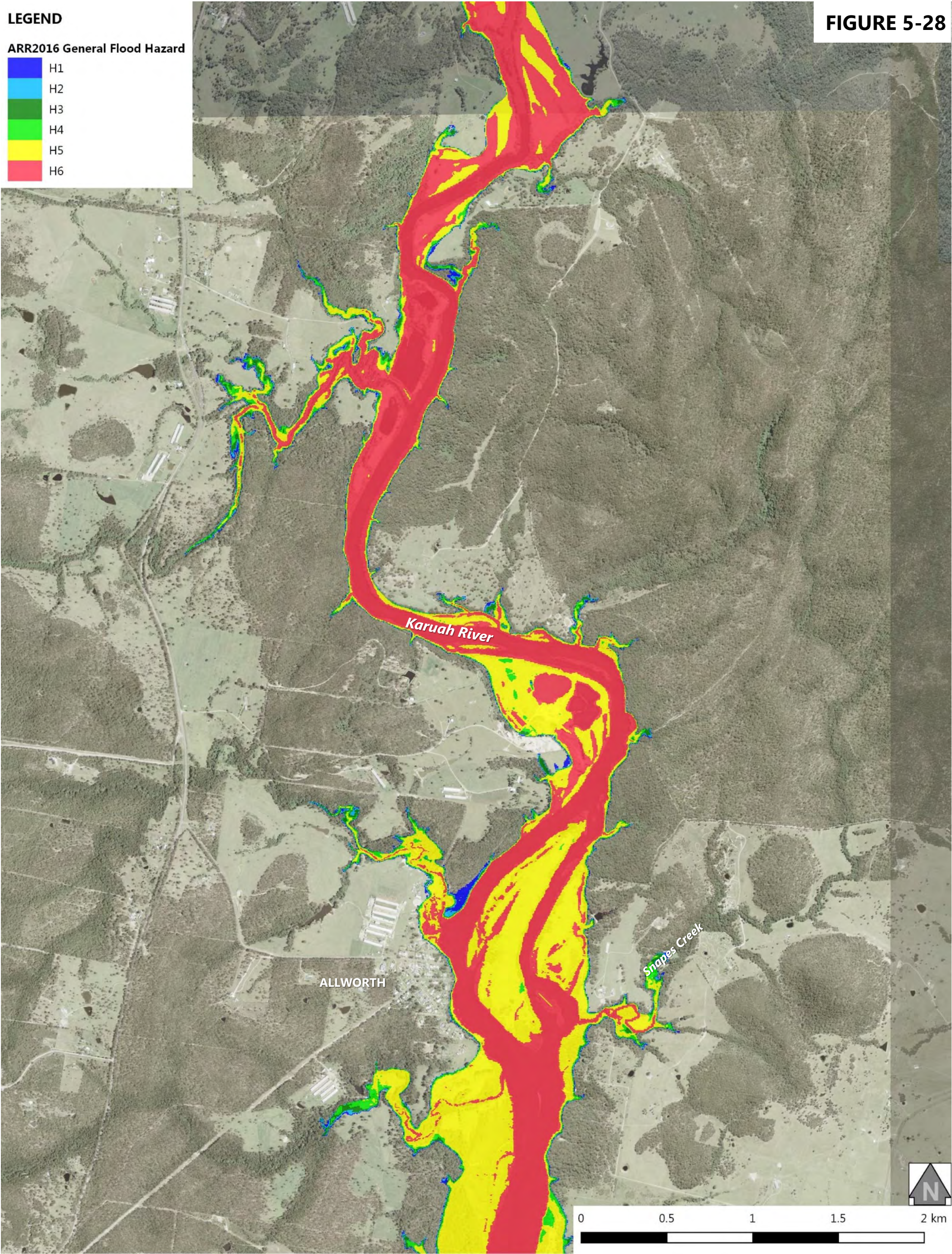


LEGEND

ARR2016 General Flood Hazard

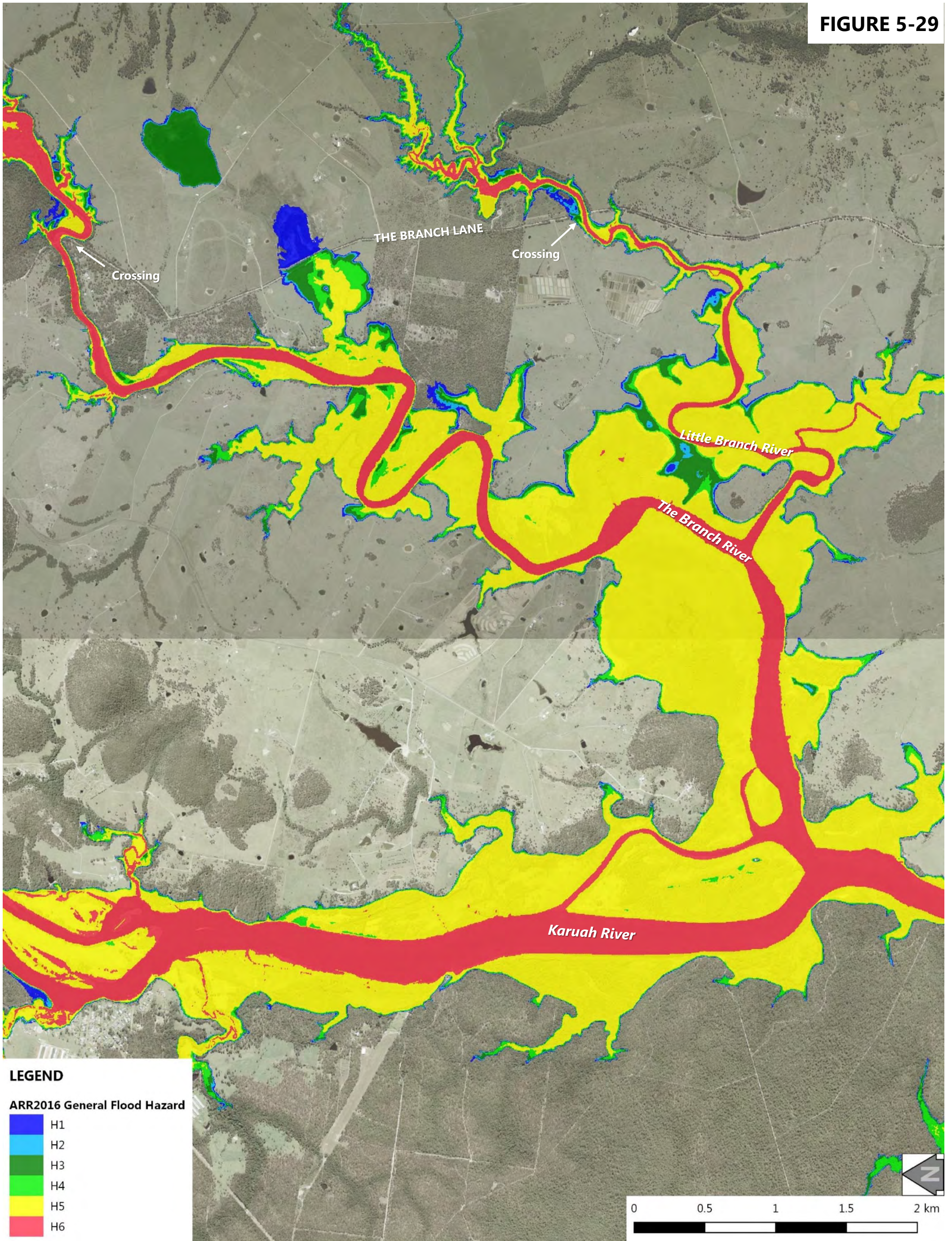
- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 5-28





**FIGURE 5-29**



**Advisian**

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301015-03792 – Karuah River and Stroud Flood Study Update – Volume 2  
Flood Mapping\_A3\_Portrait\_1% AEP\_RevA.pdf

**1% AEP DESIGN FLOOD EVENT  
ARR2016 GENERAL FLOOD HAZARD AT THE BRANCH**

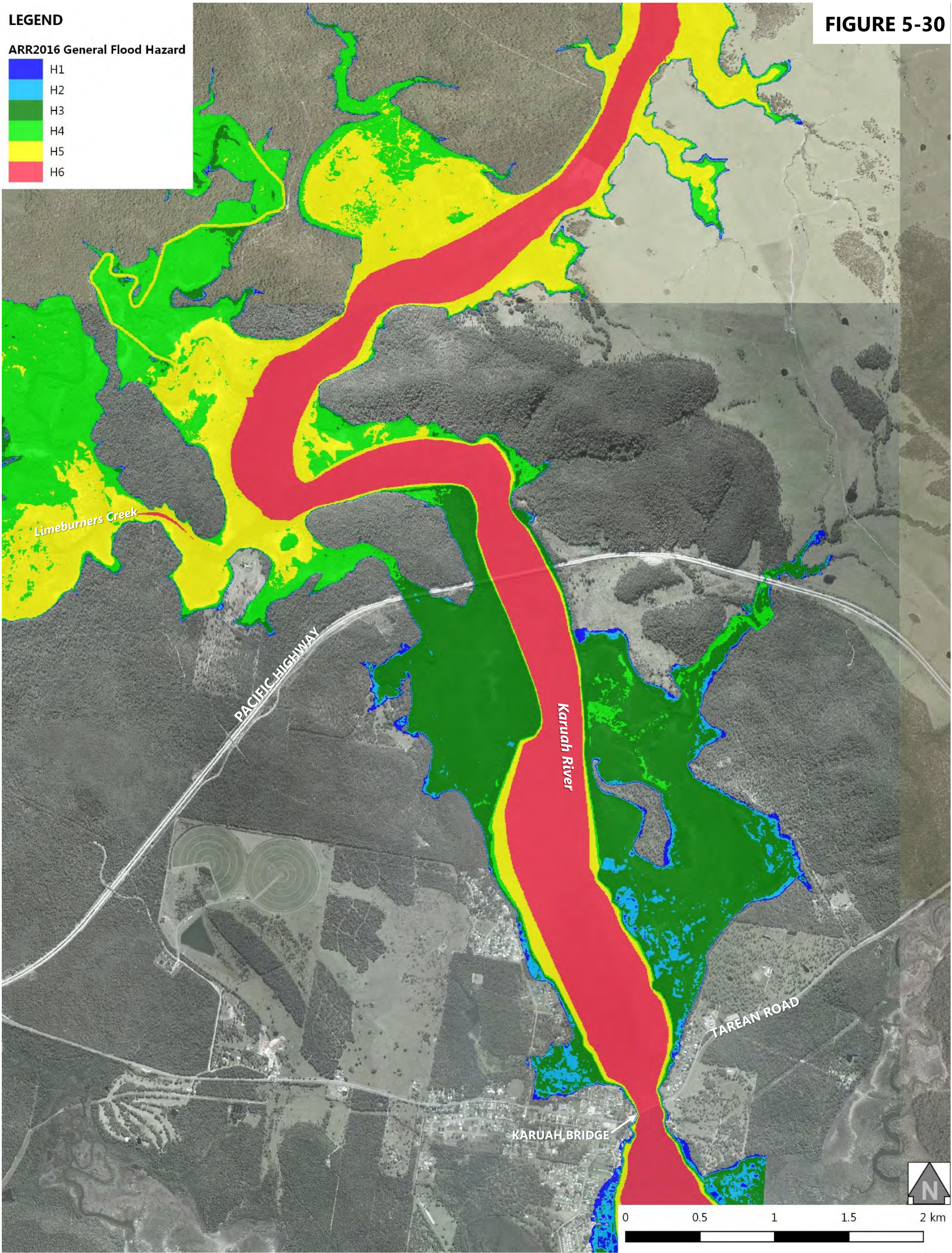


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

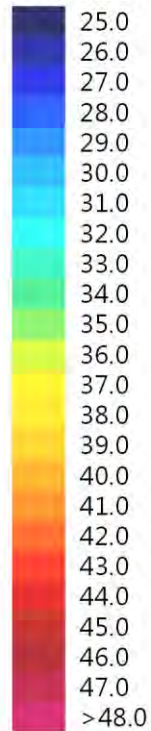
FIGURE 5-30



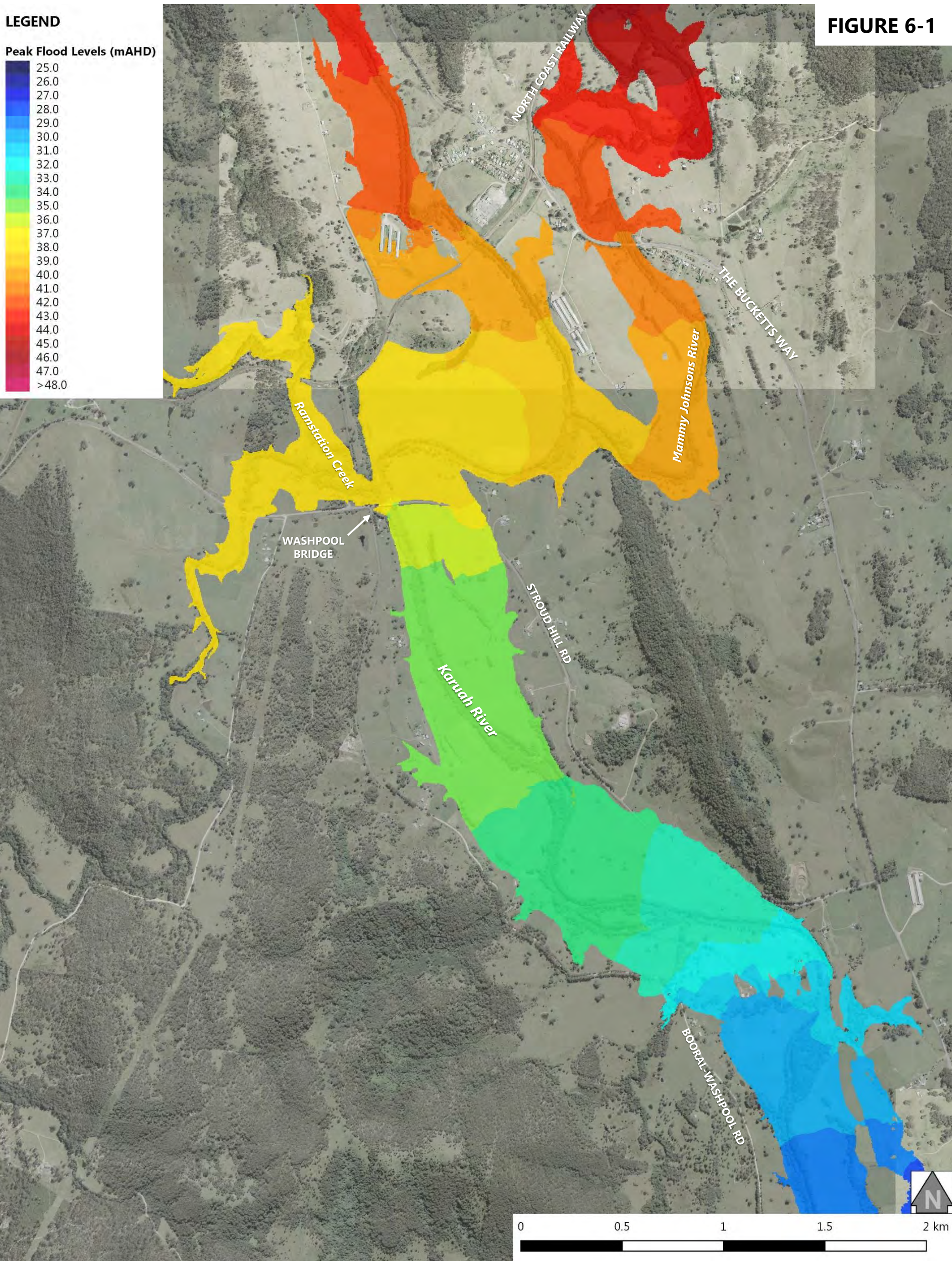


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 6-1**





LEGEND

Peak Flood Levels (mAHD)

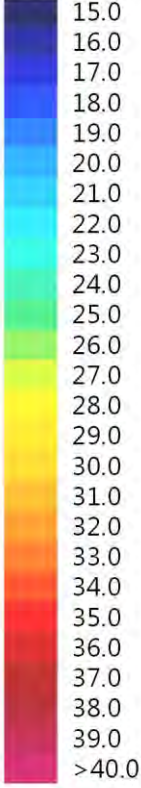
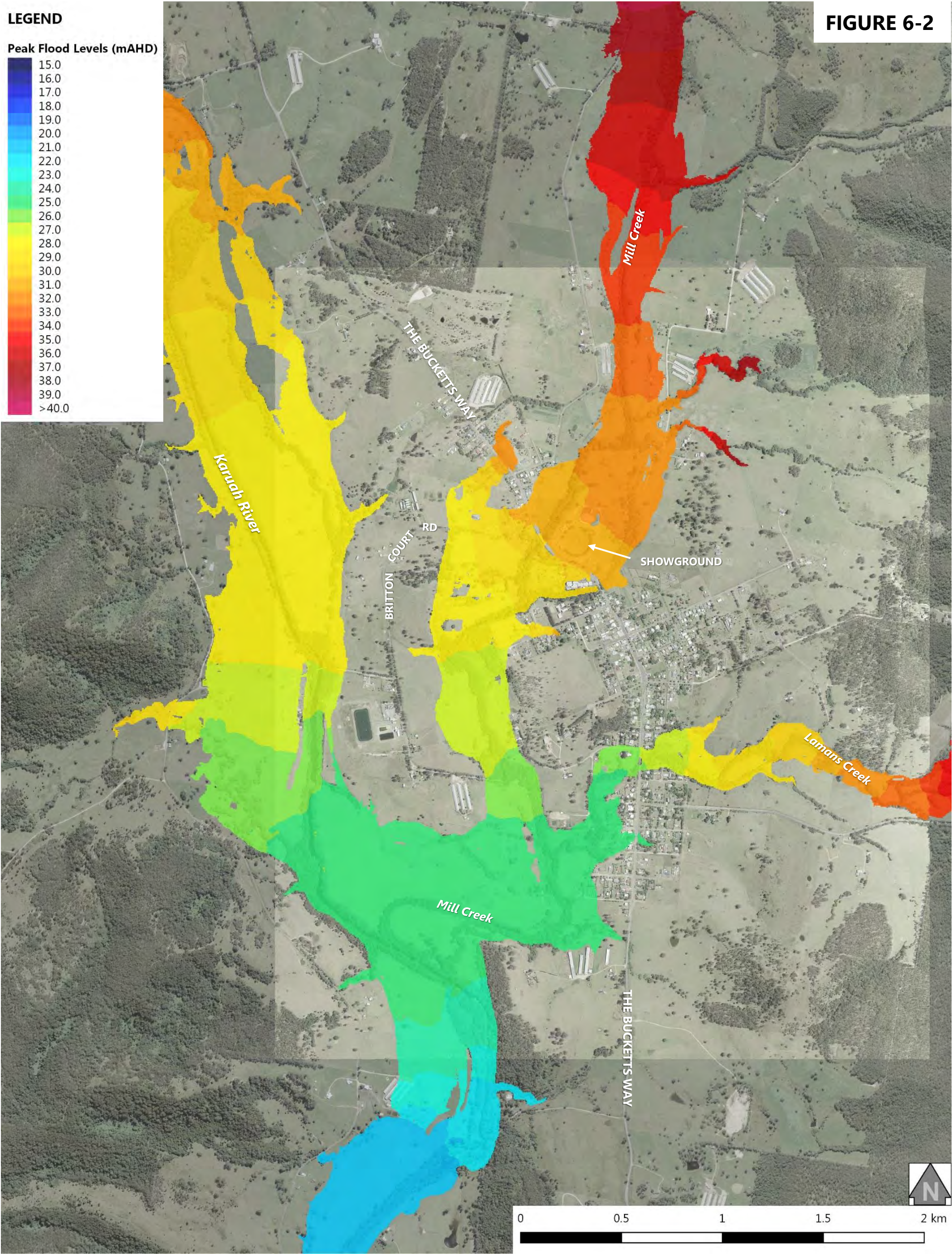


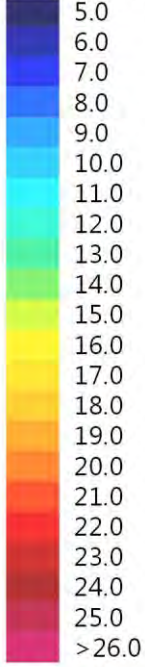
FIGURE 6-2



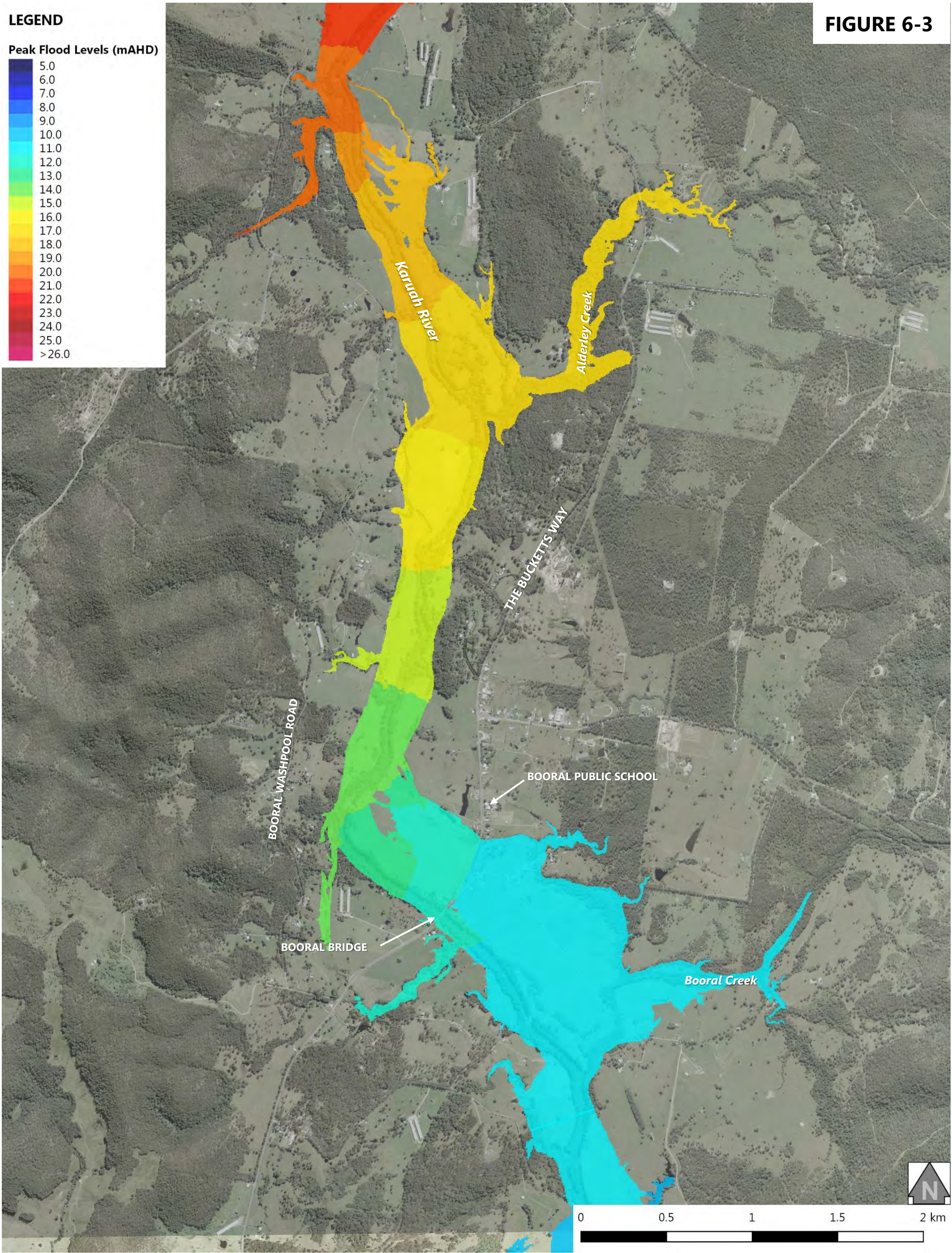


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 6-3**





LEGEND

Peak Flood Levels (mAHD)

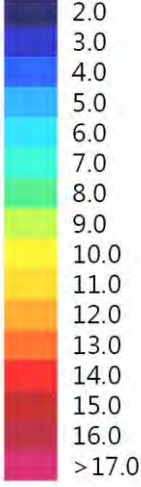
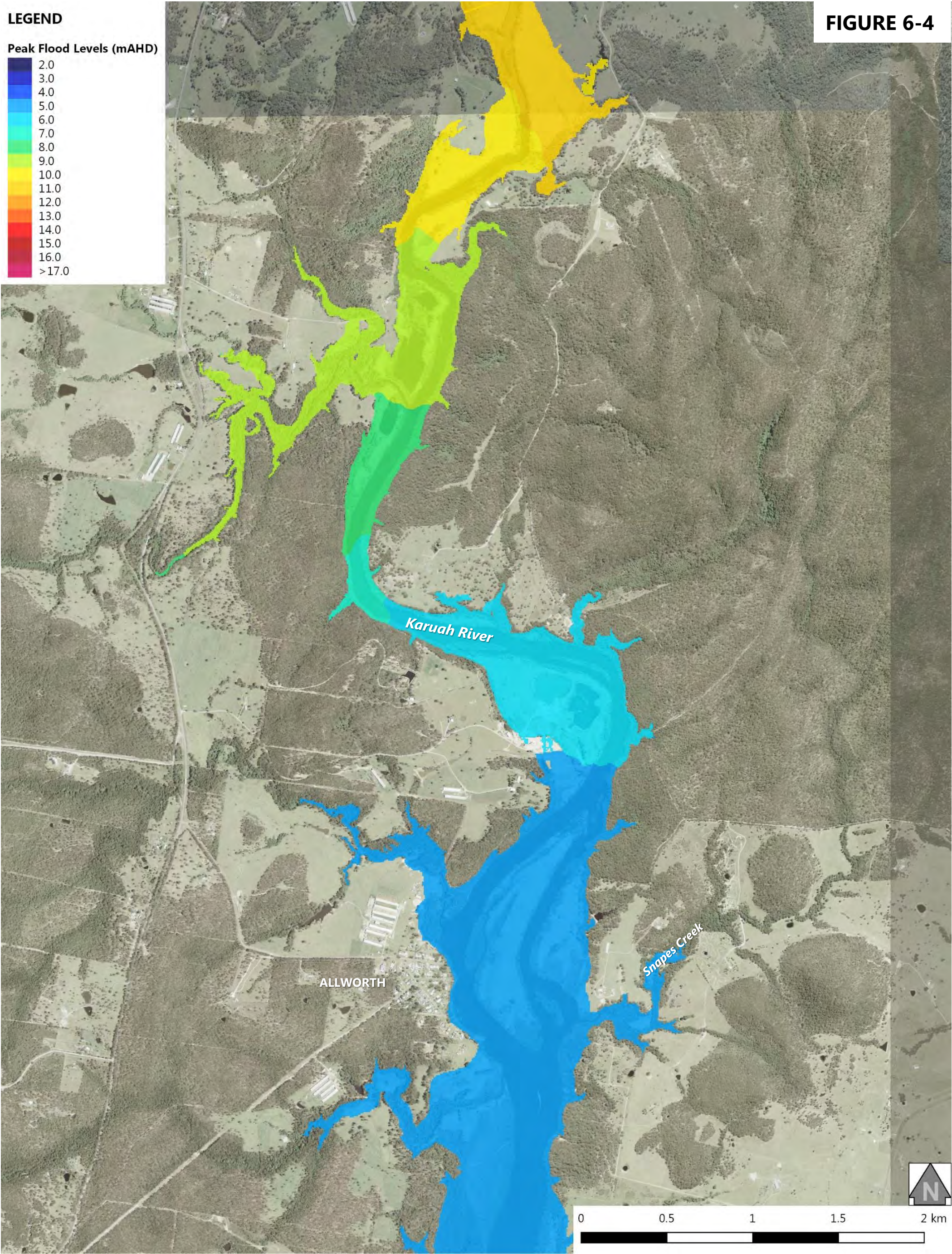
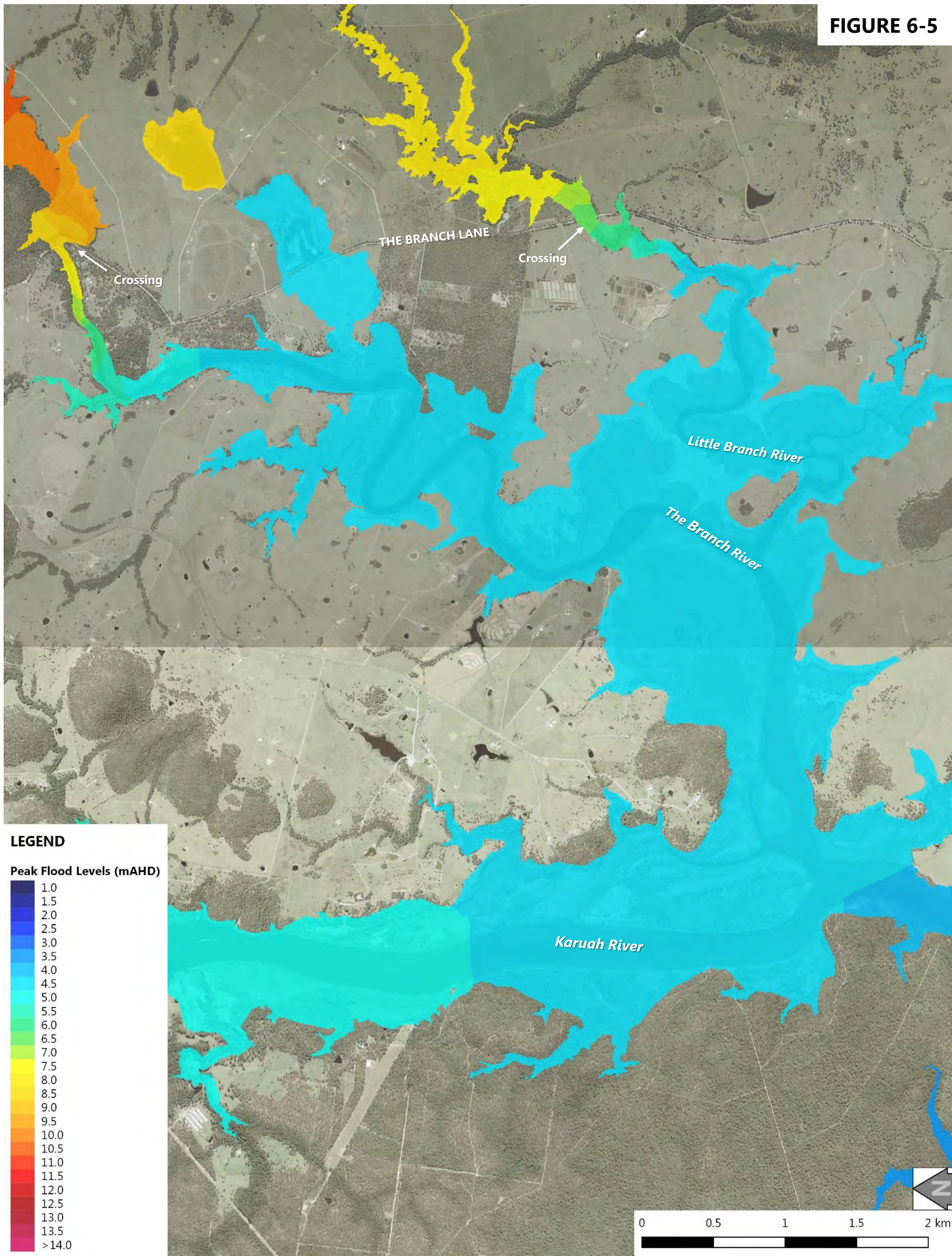


FIGURE 6-4





**FIGURE 6-5**



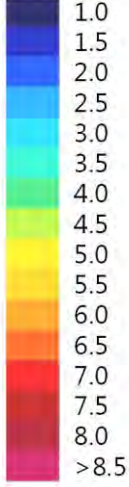
**Advisian**

WorleyParsons Group

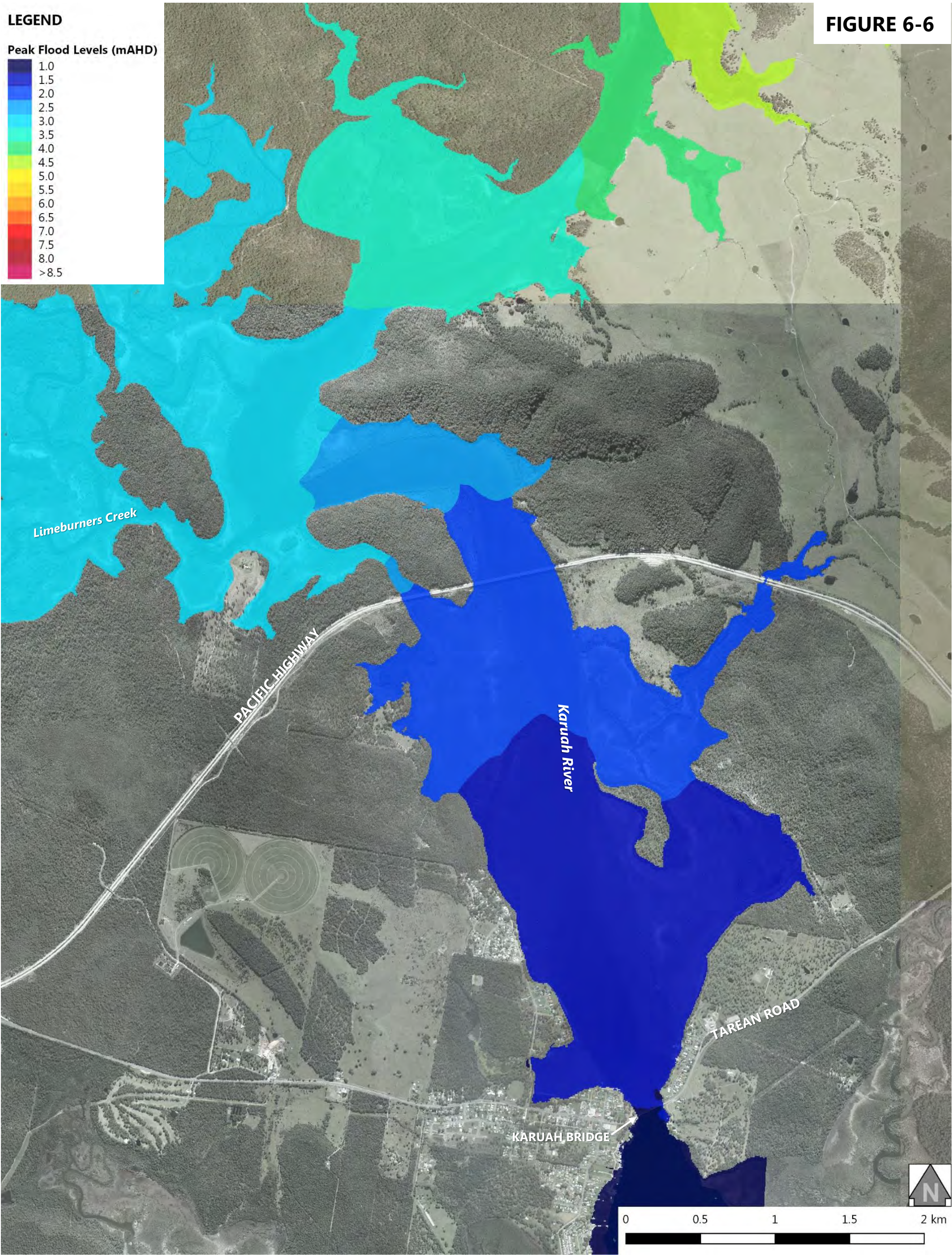


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 6-6**





LEGEND

Peak Flood Depth (m)

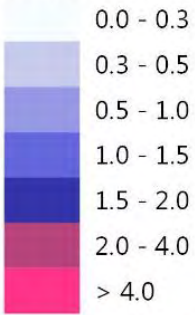
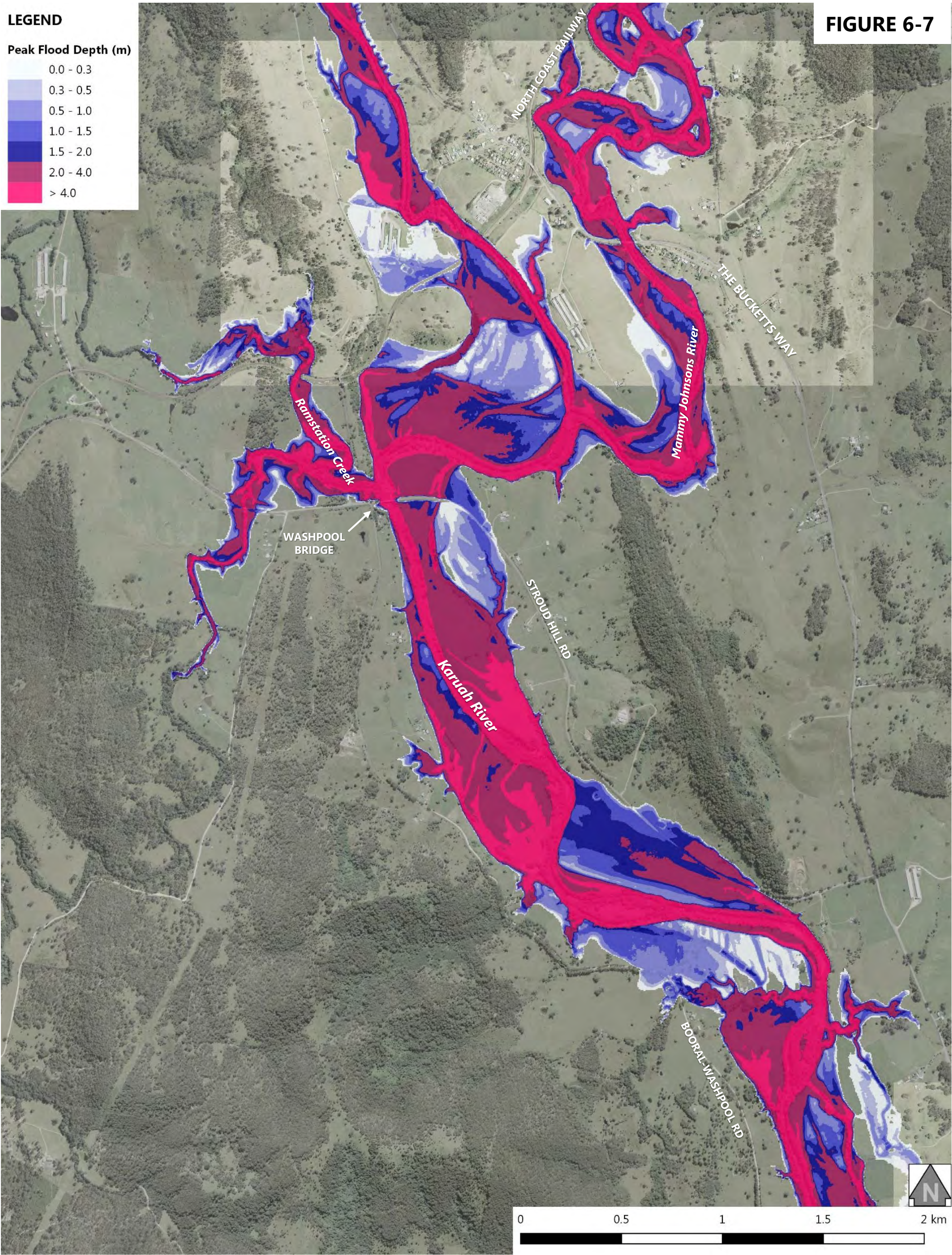


FIGURE 6-7





LEGEND

Peak Flood Depth (m)

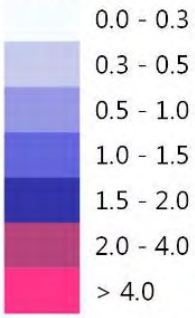
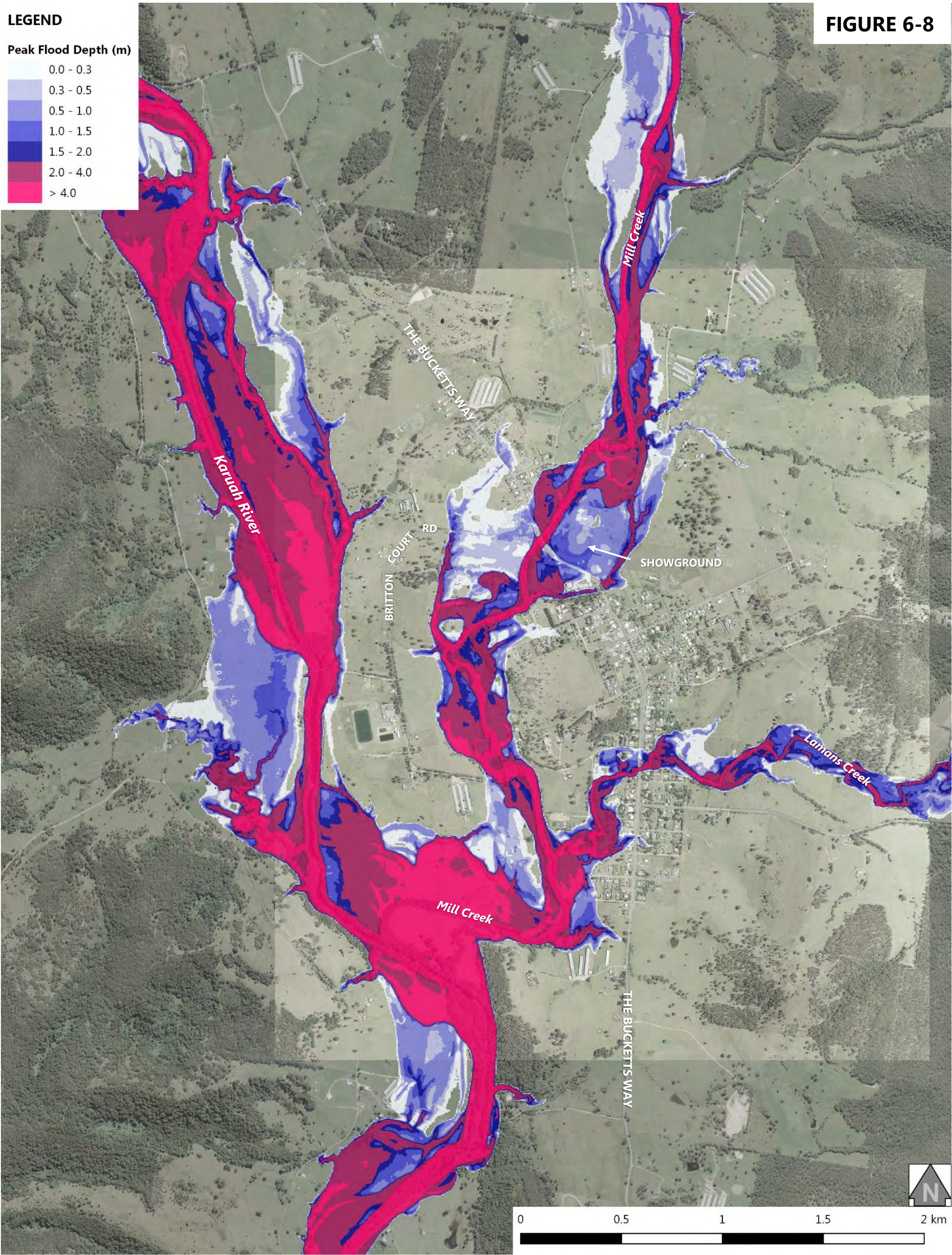


FIGURE 6-8





LEGEND

Peak Flood Depth (m)

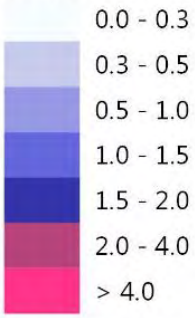
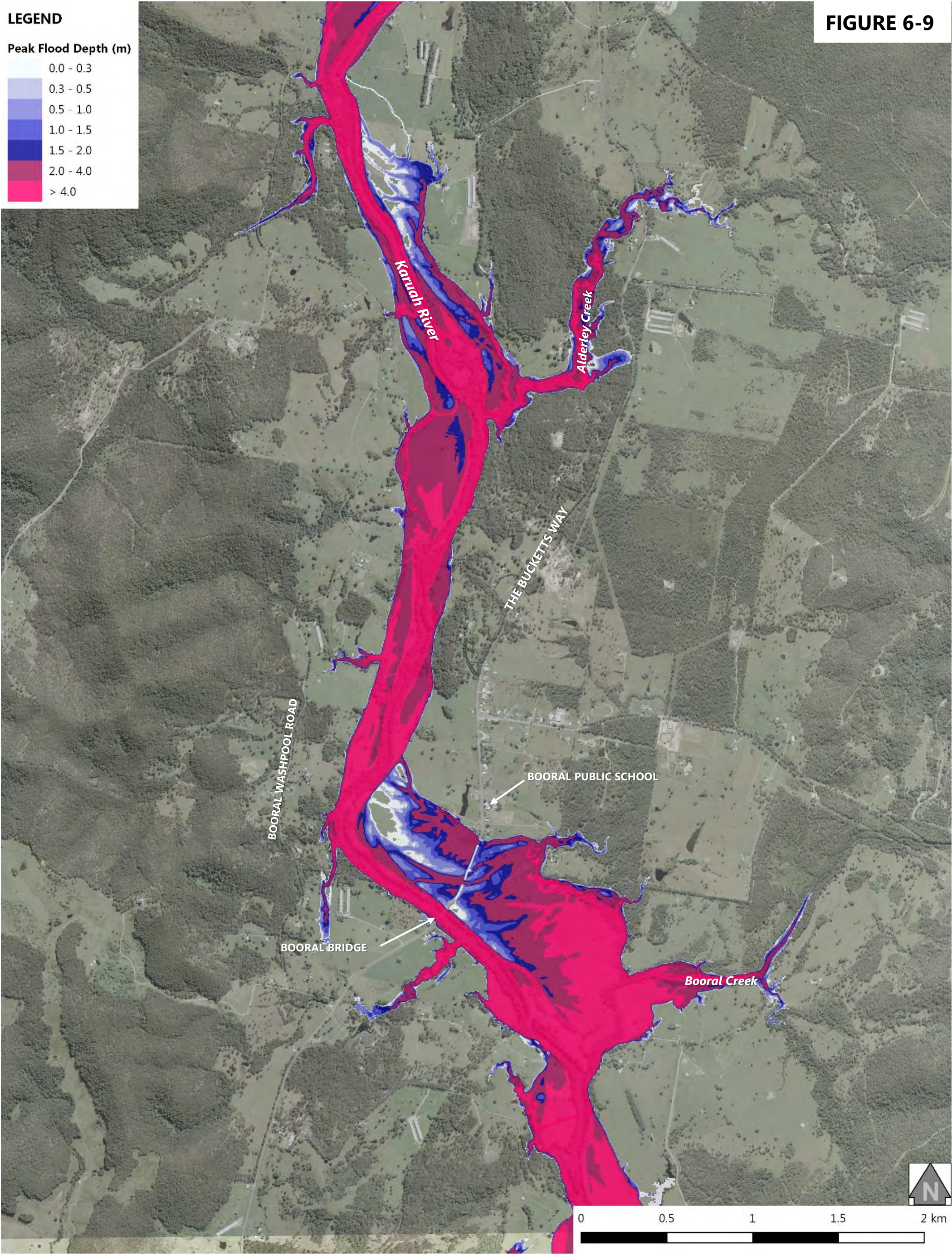


FIGURE 6-9



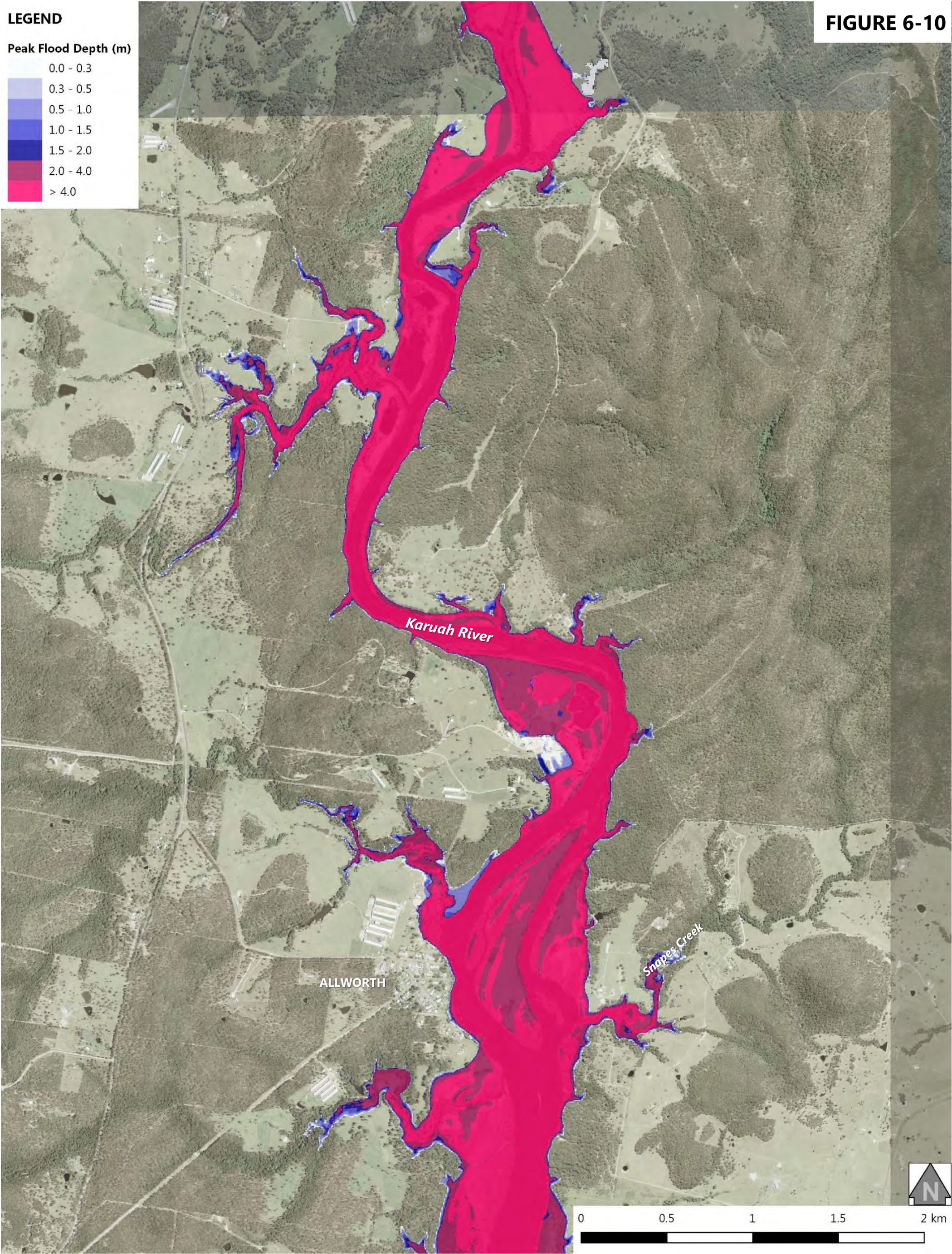


LEGEND

Peak Flood Depth (m)

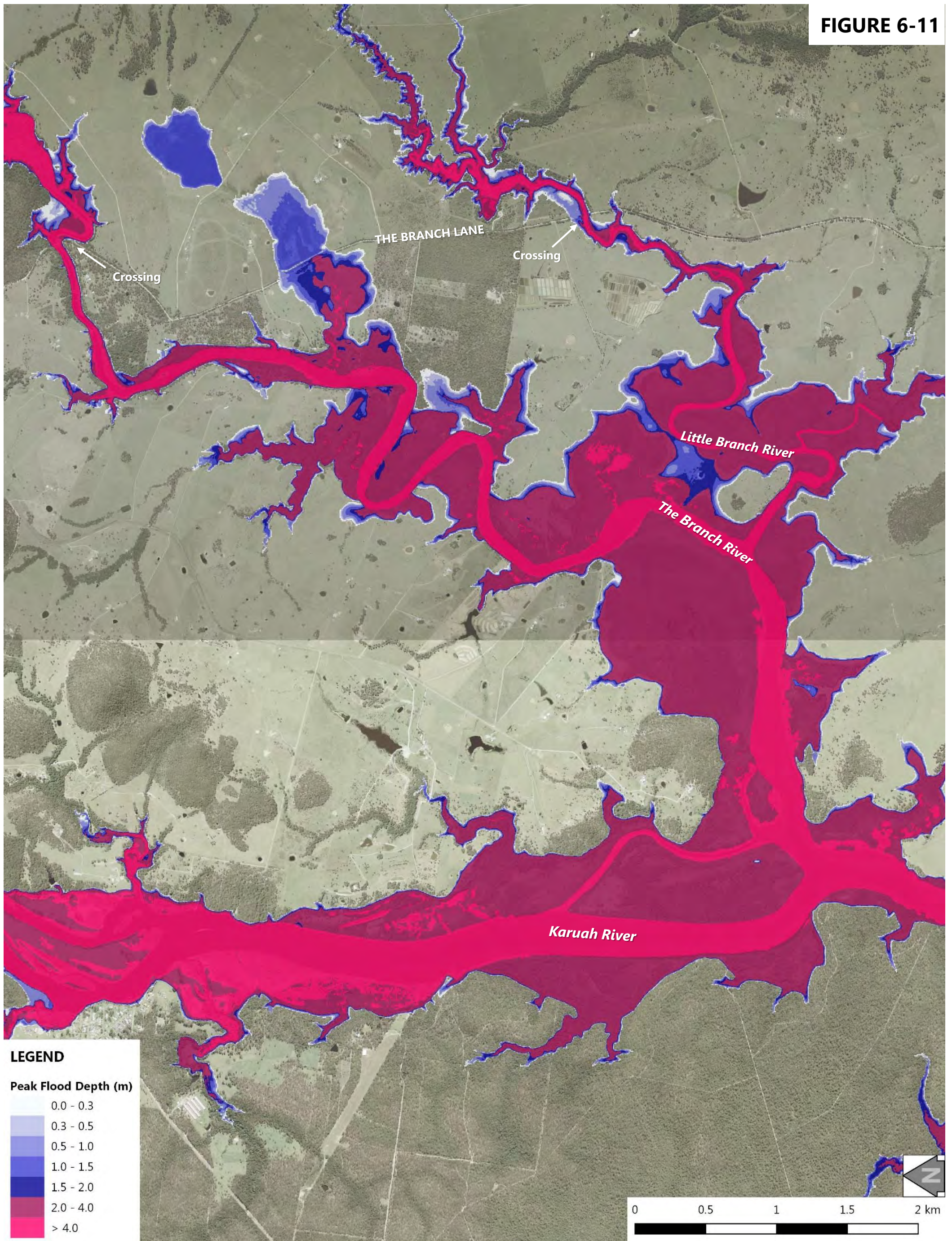
- 0.0 - 0.3
- 0.3 - 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 4.0
- > 4.0

FIGURE 6-10





**FIGURE 6-11**



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301015-03792 – Karuah River and Stroud Flood Study Update – Volume 2  
Flood Mapping\_A3\_Portrait\_0.5%AEP\_RevA.pdf

**0.5% AEP DESIGN FLOOD EVENT  
PEAK FLOOD DEPTH AT THE BRANCH**



LEGEND

Peak Flood Depth (m)

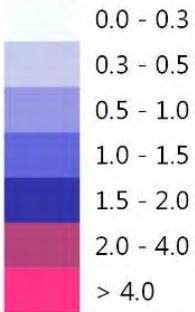
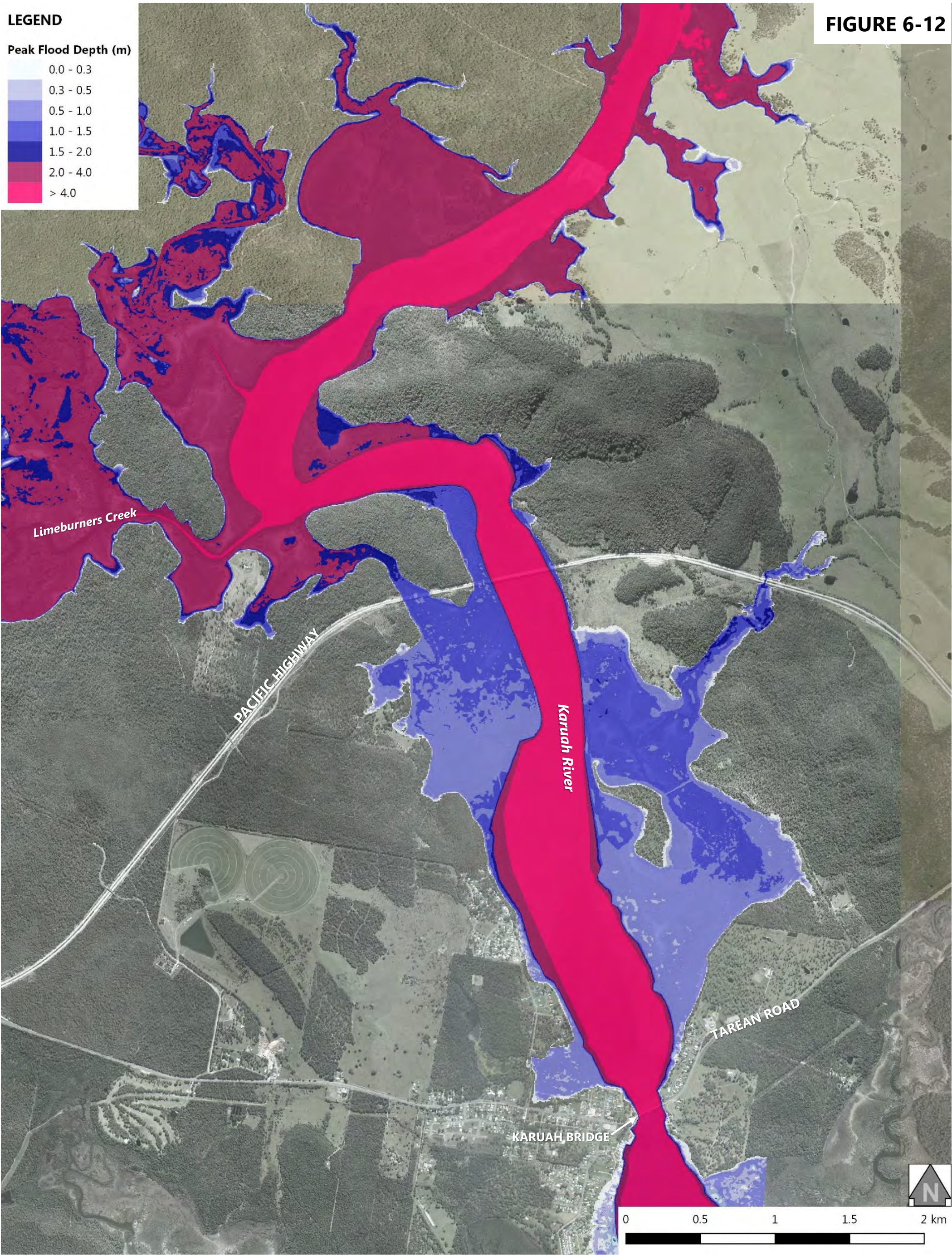


FIGURE 6-12





LEGEND

Peak Flood Levels (mAHD)

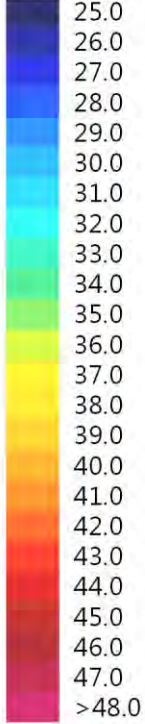
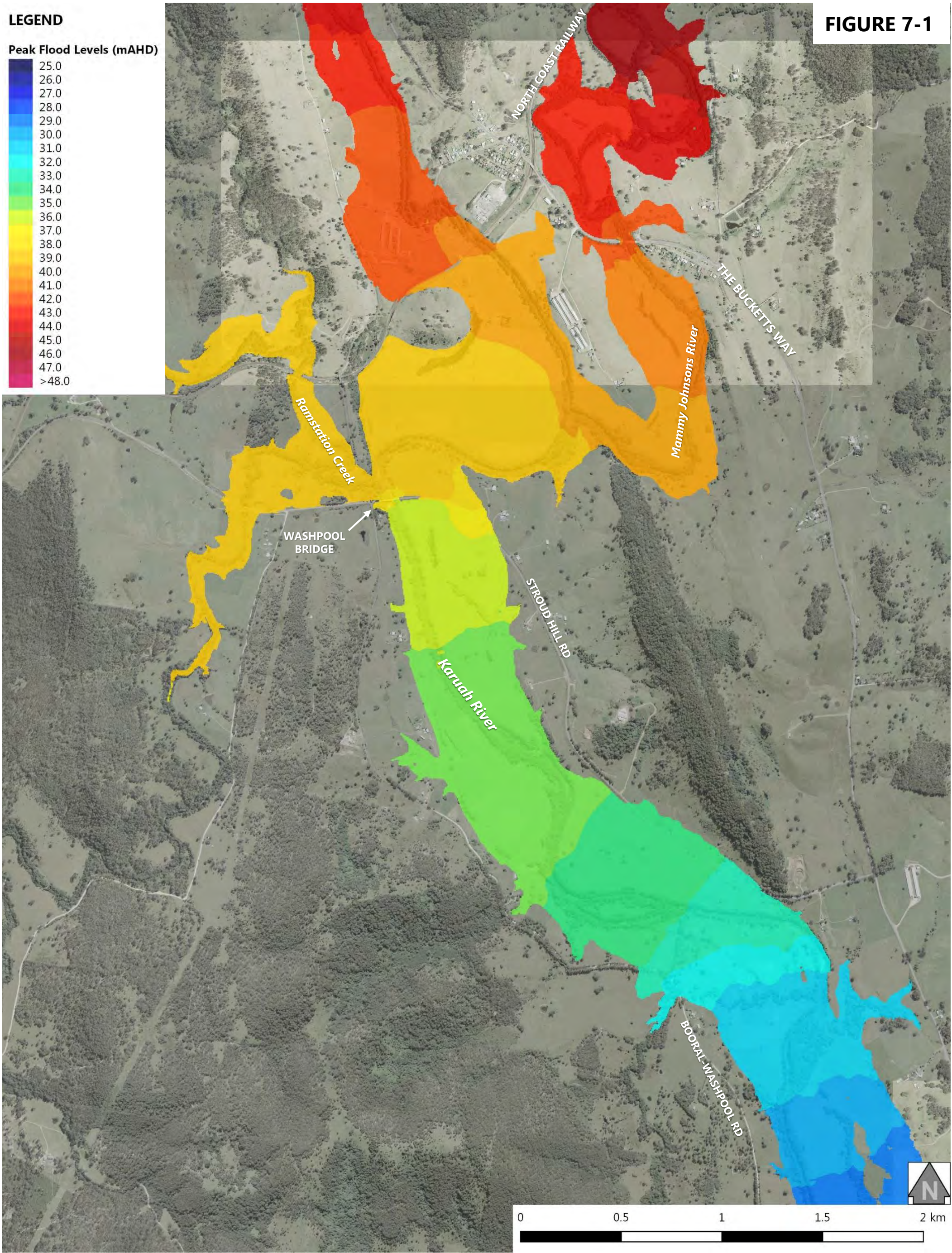


FIGURE 7-1





LEGEND

Peak Flood Levels (mAHD)

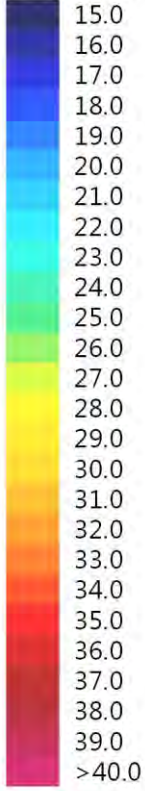
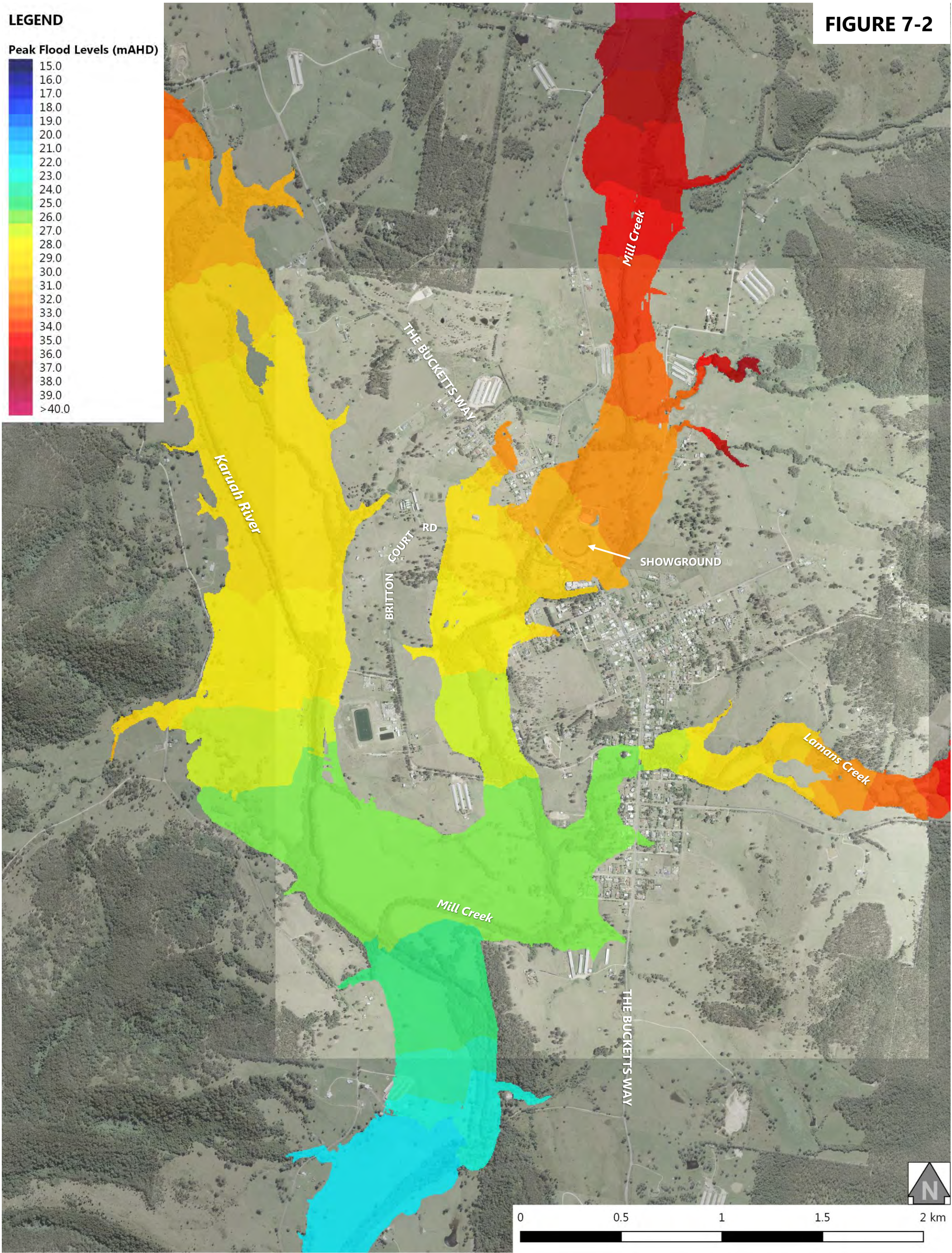


FIGURE 7-2





LEGEND

Peak Flood Levels (mAHD)

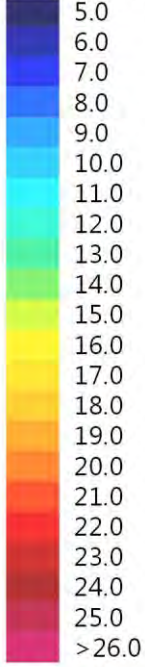
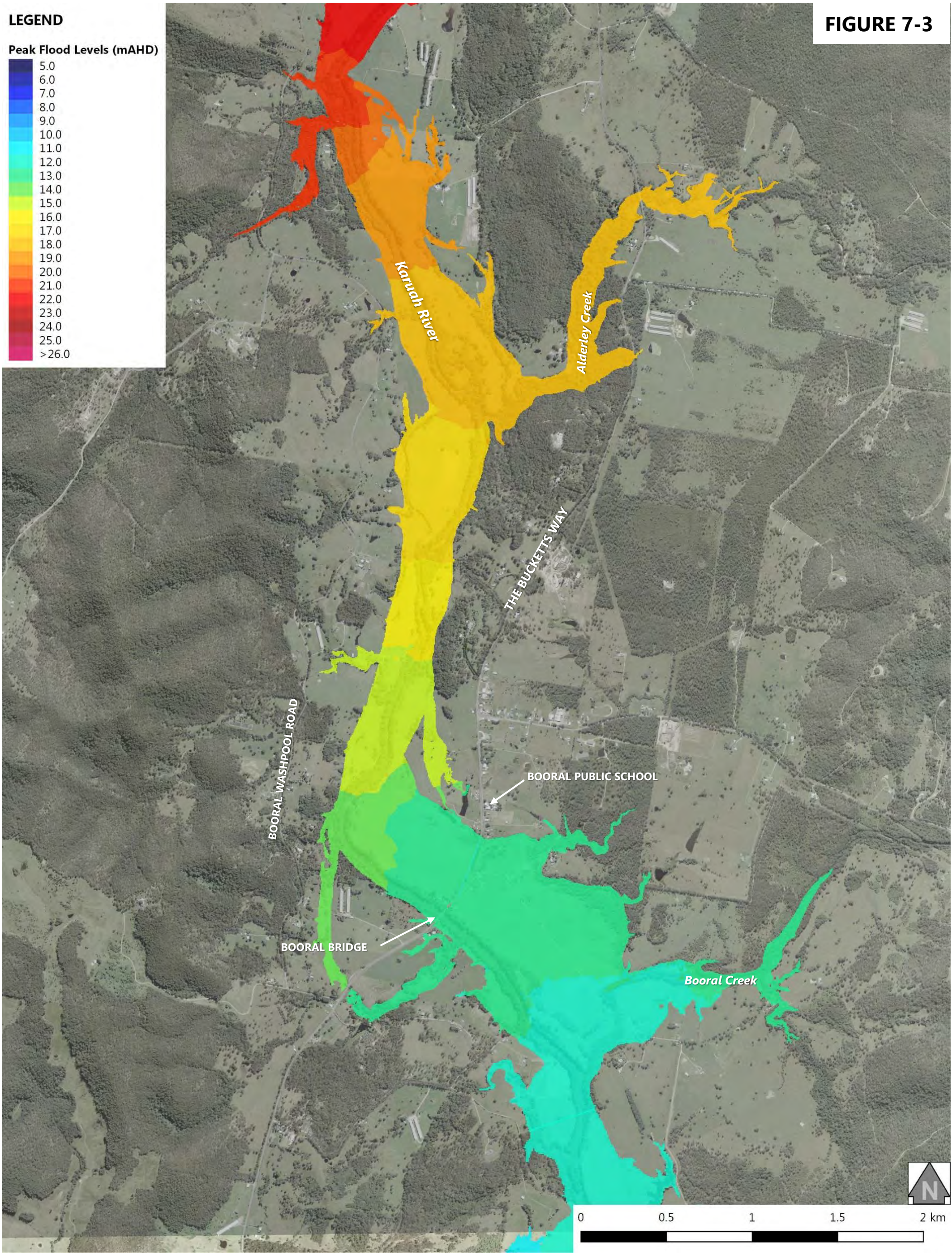


FIGURE 7-3





LEGEND

Peak Flood Levels (mAHD)

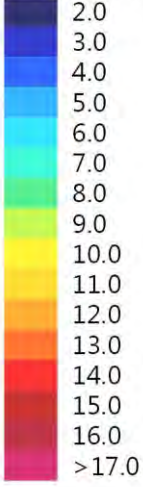
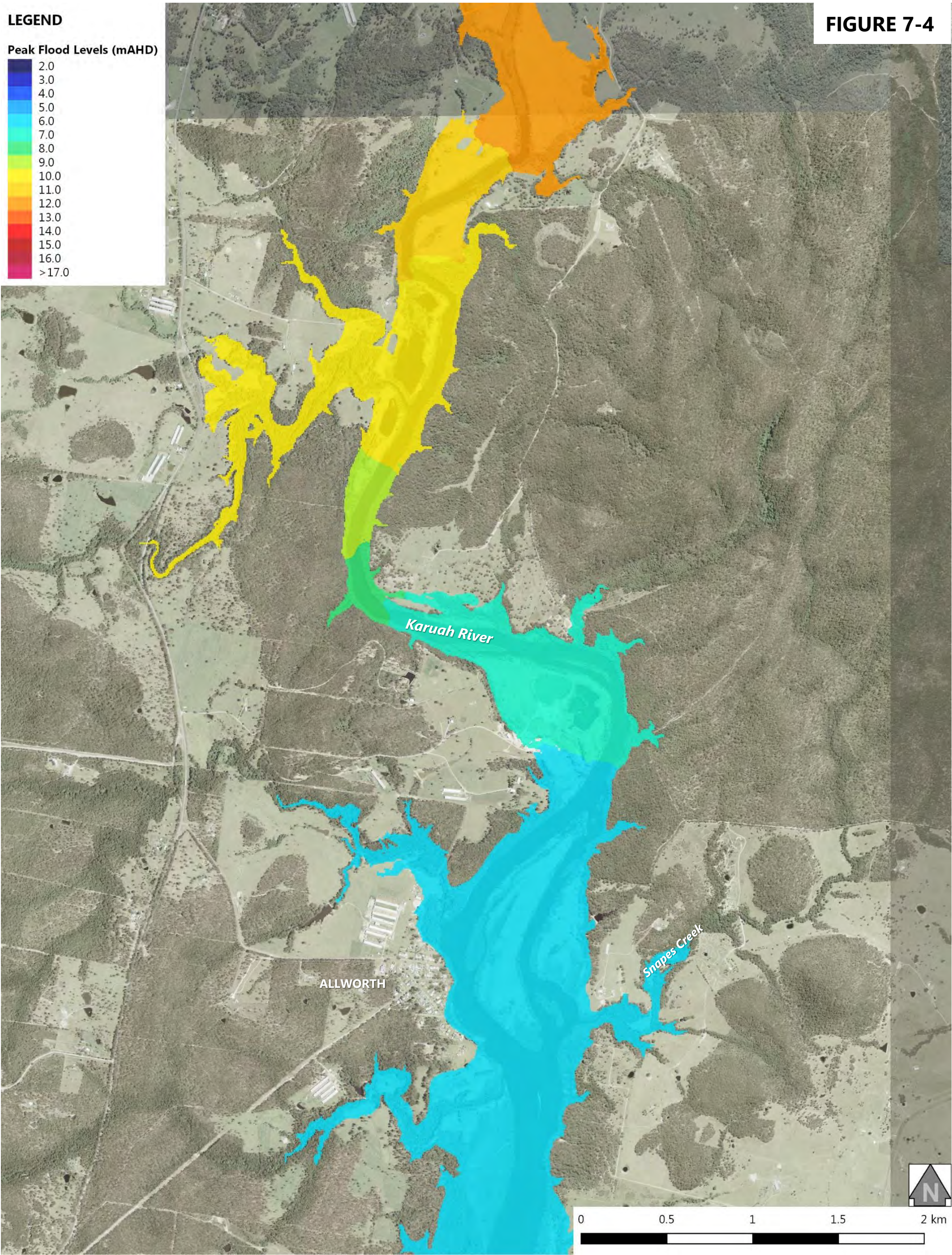
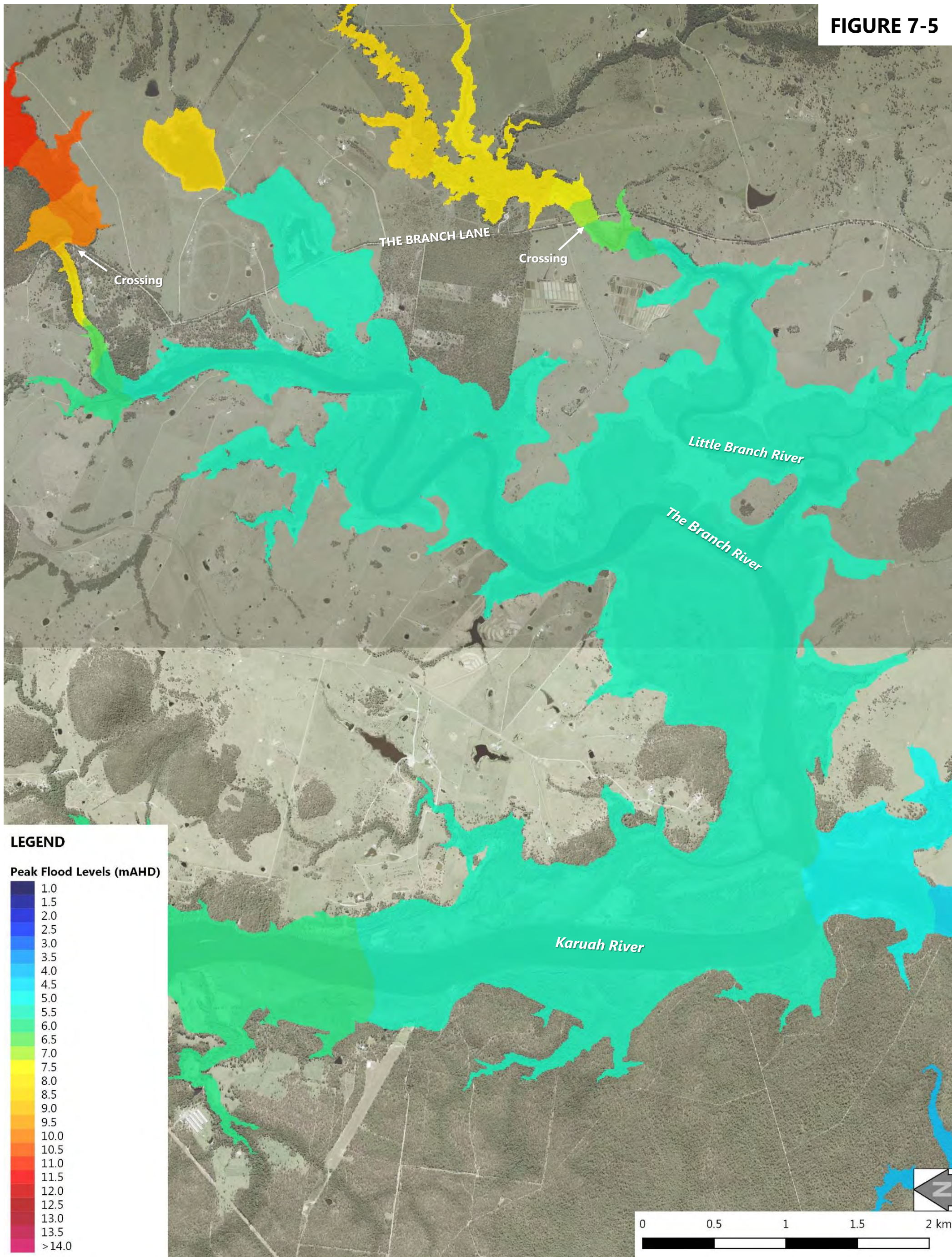


FIGURE 7-4





**FIGURE 7-5**



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LEGEND

Peak Flood Levels (mAHD)

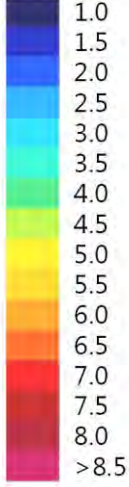
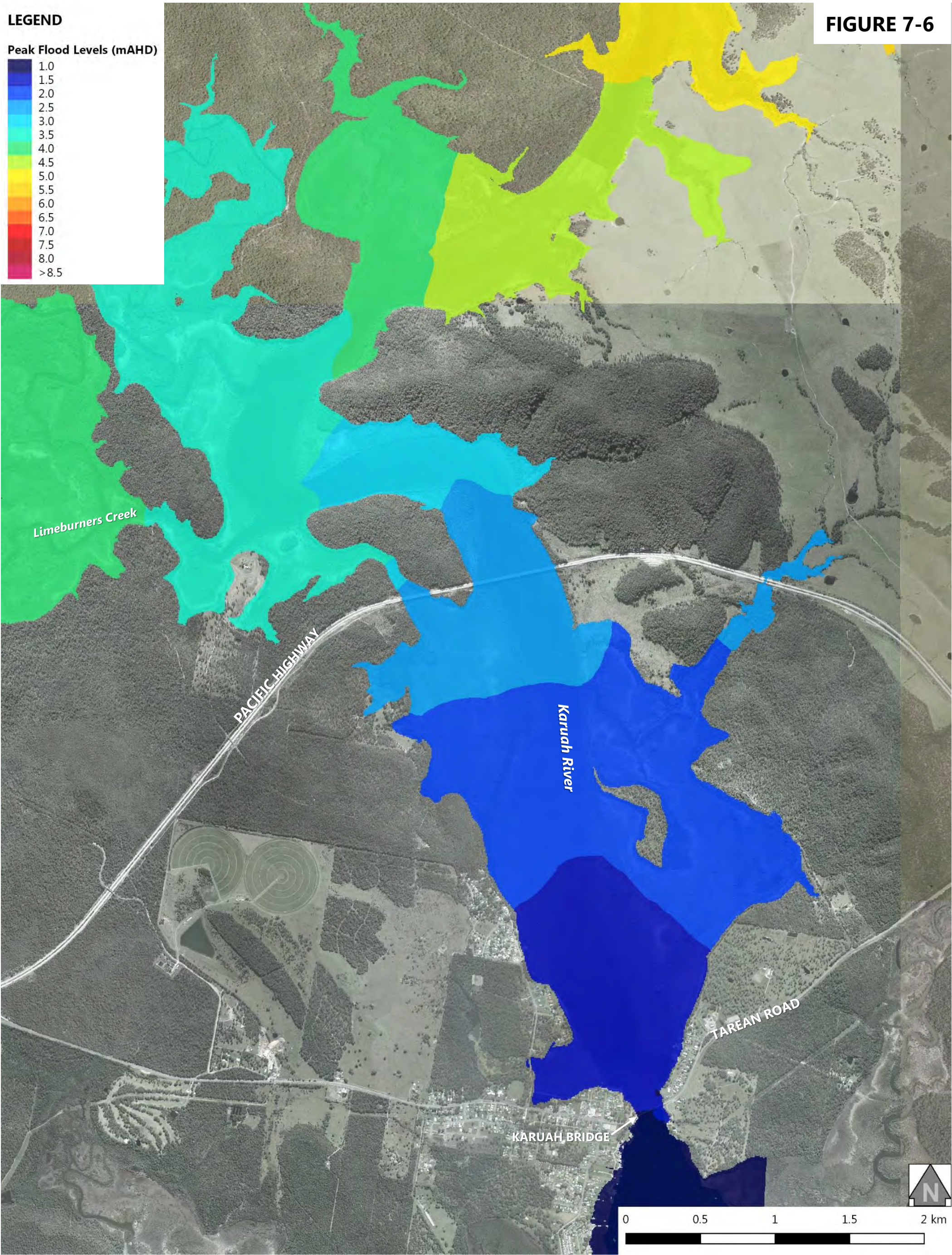


FIGURE 7-6





LEGEND

Peak Flood Depth (m)

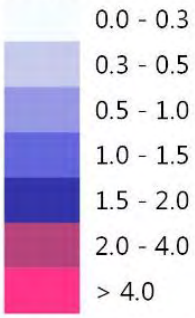
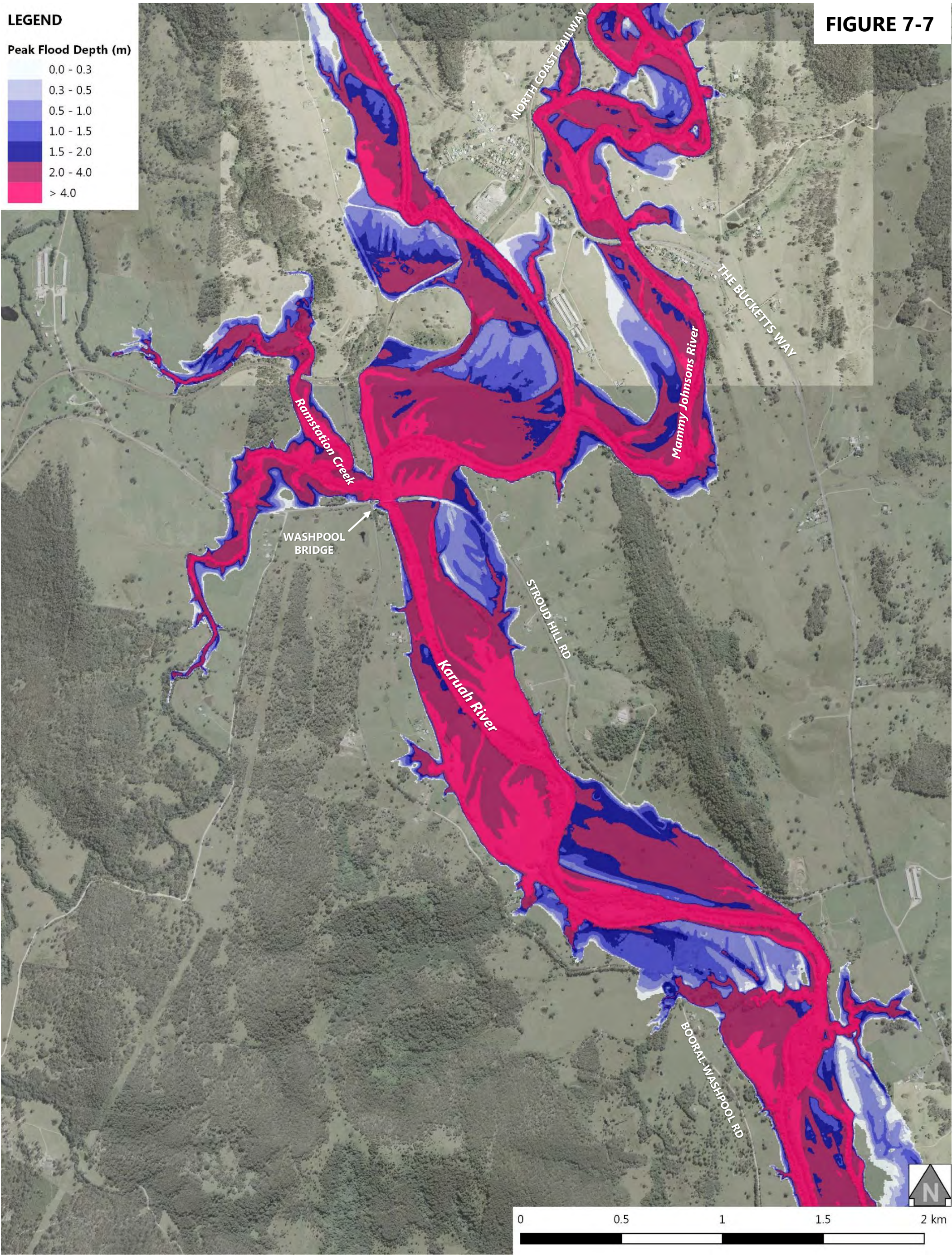


FIGURE 7-7





LEGEND

Peak Flood Depth (m)

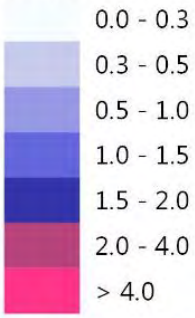
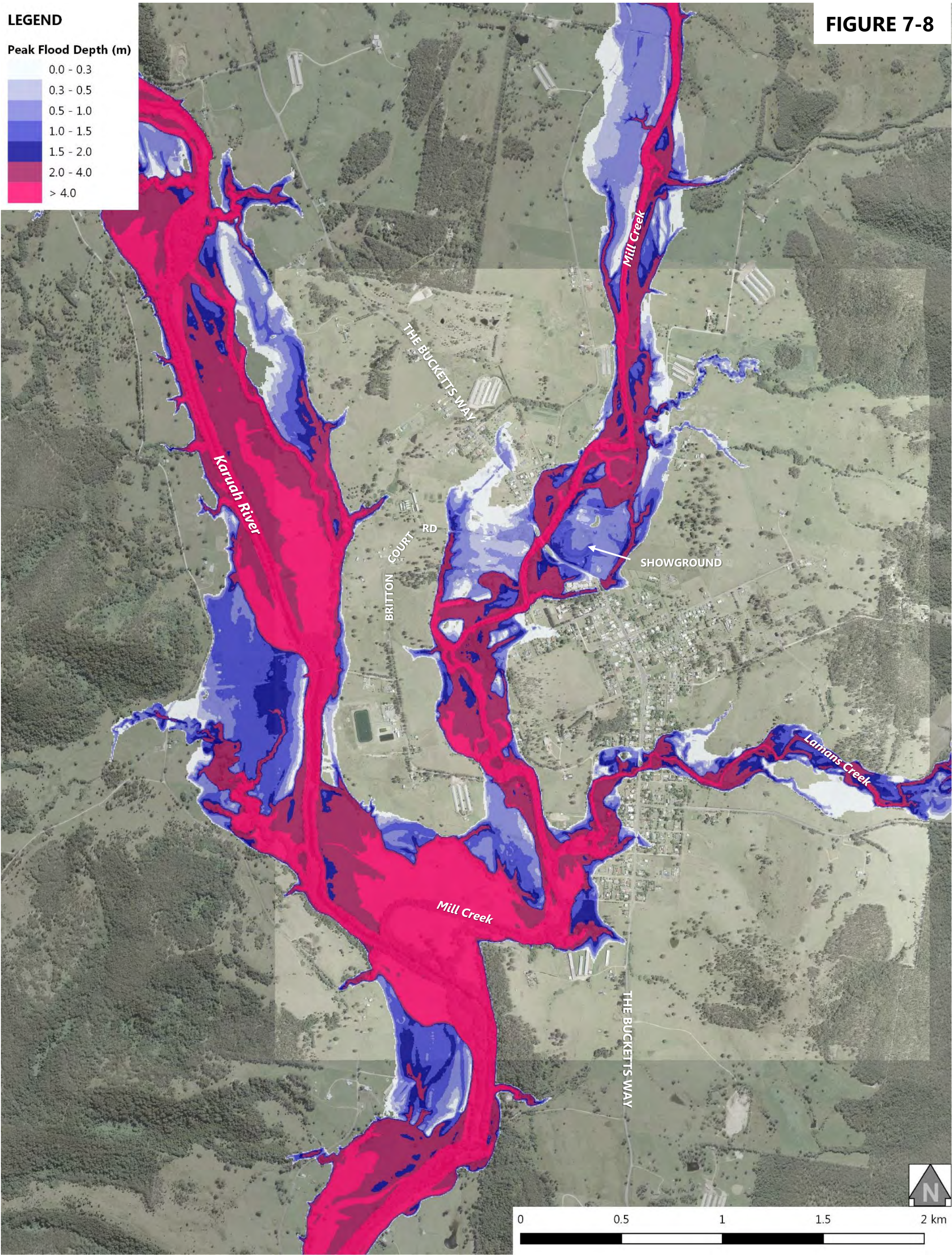


FIGURE 7-8





LEGEND

Peak Flood Depth (m)

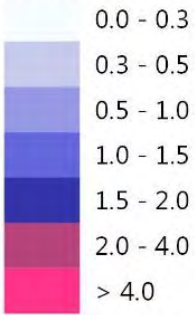
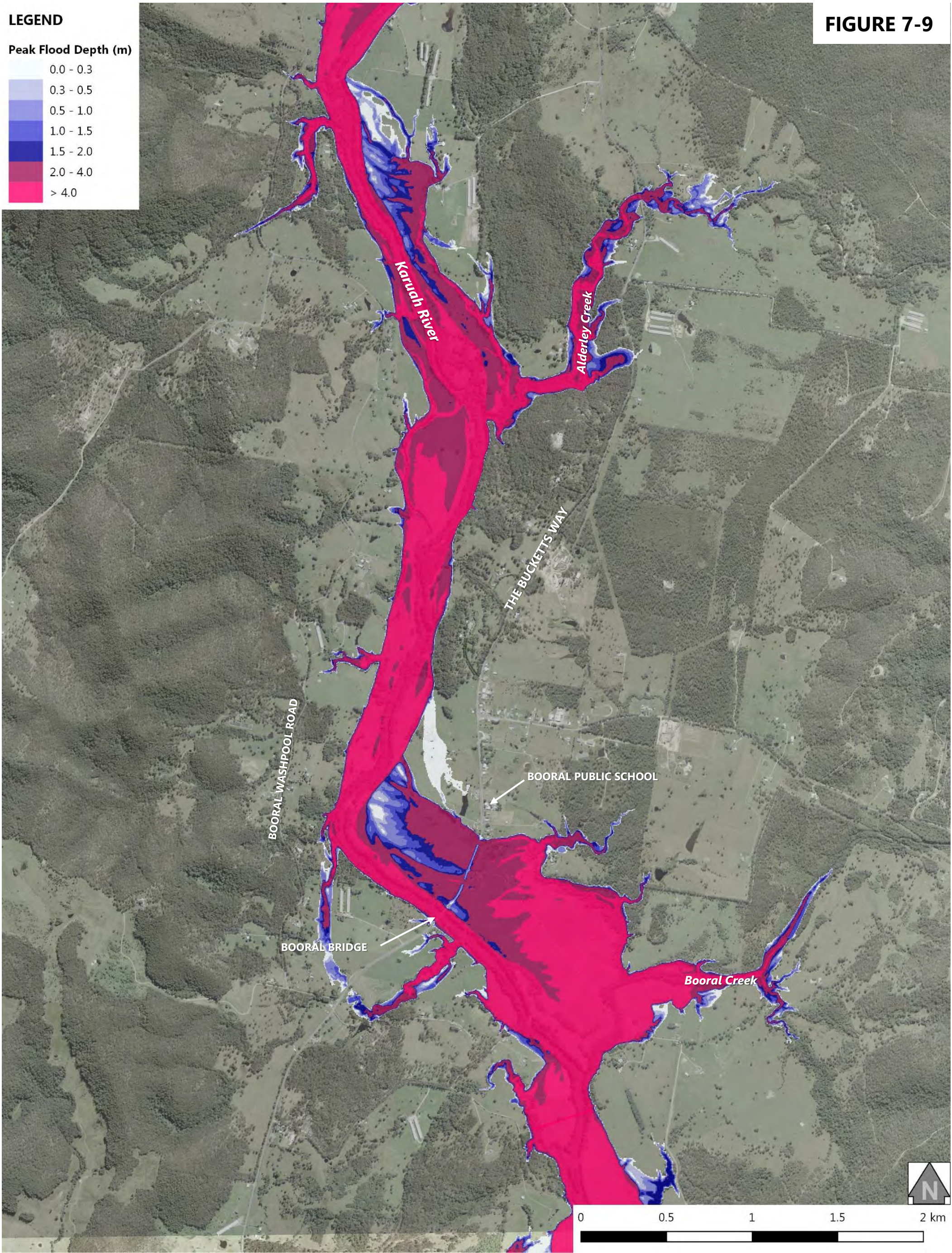


FIGURE 7-9





LEGEND

Peak Flood Depth (m)

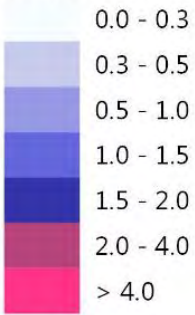
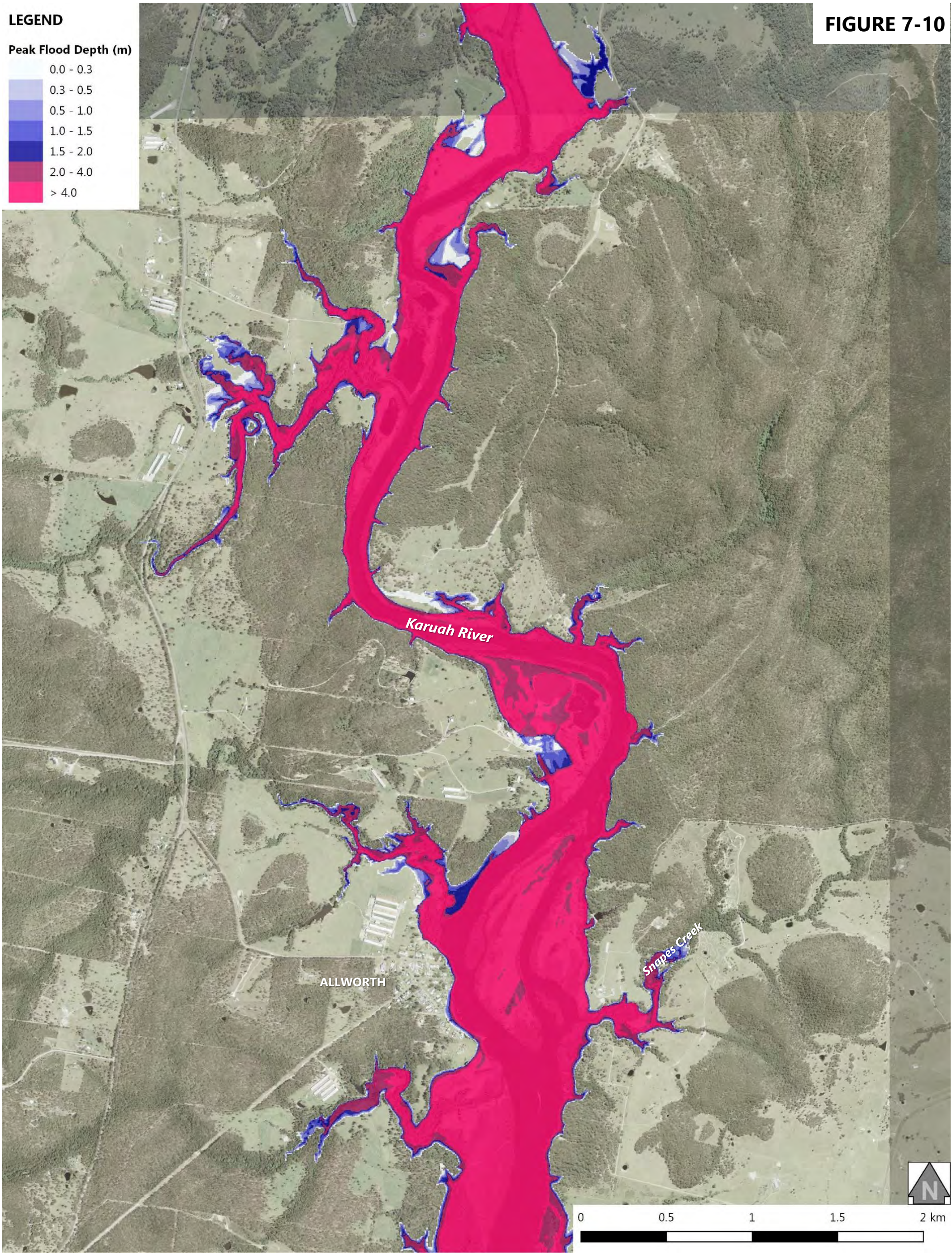
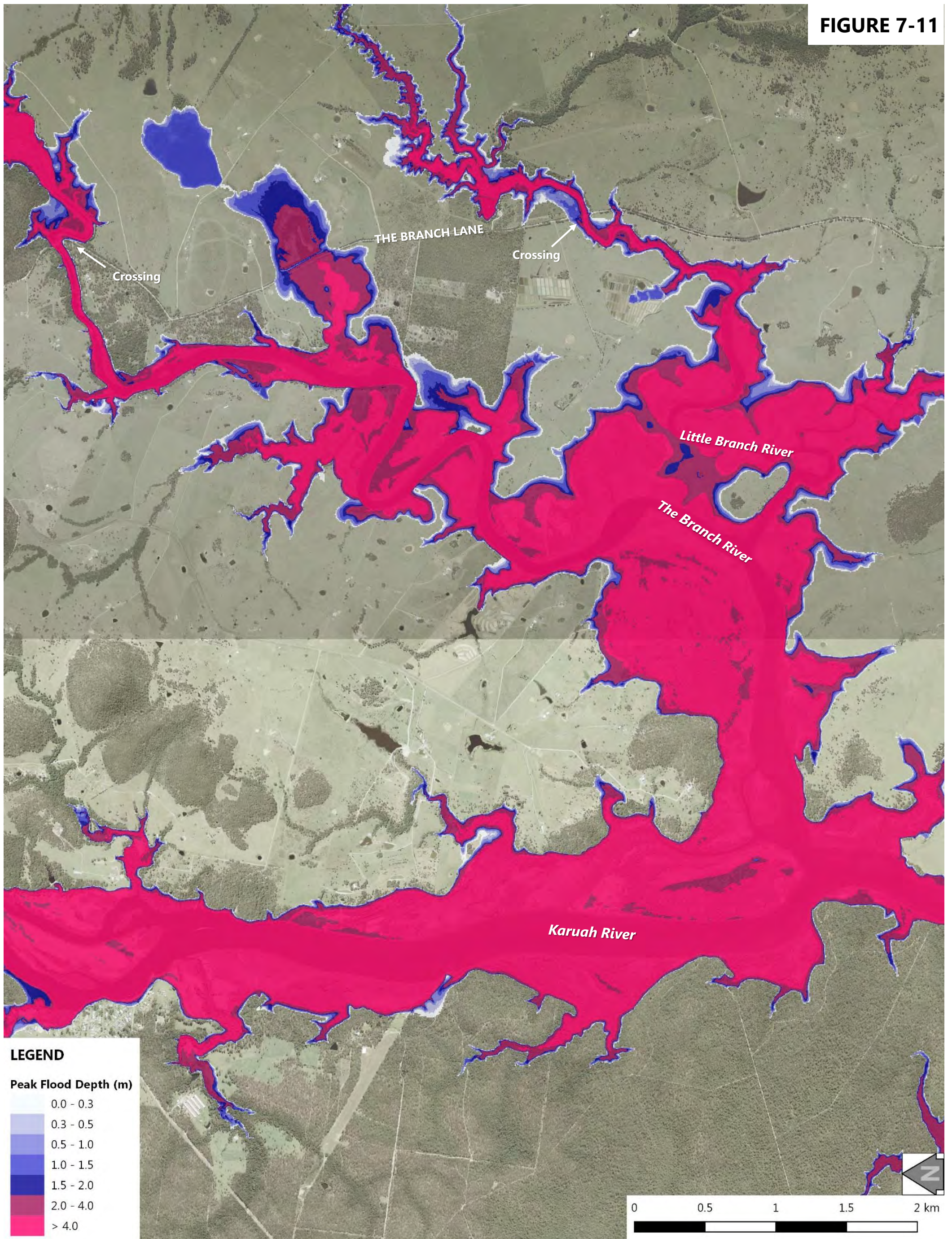


FIGURE 7-10





**FIGURE 7-11**



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301015-03792 – Karuah River and Stroud Flood Study Update – Volume 2  
Flood Mapping\_A3\_Portrait\_0.2%AEP\_RevA.pdf

**0.2% AEP DESIGN FLOOD EVENT  
PEAK FLOOD DEPTH AT THE BRANCH**



LEGEND

Peak Flood Depth (m)

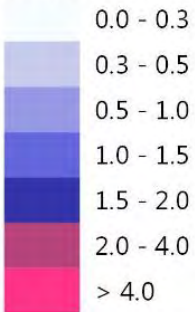
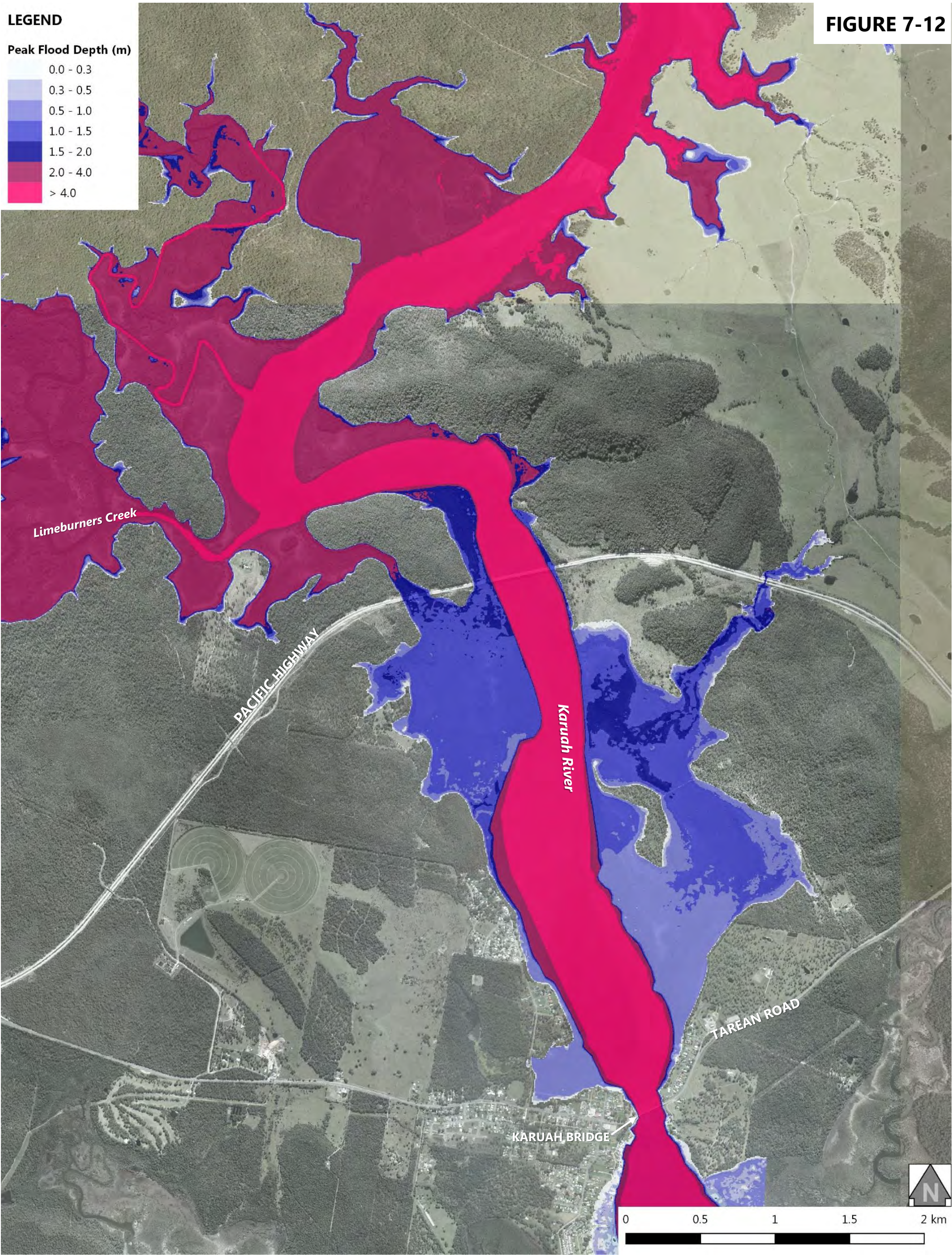


FIGURE 7-12





LEGEND

Peak Flood Levels (mAHD)

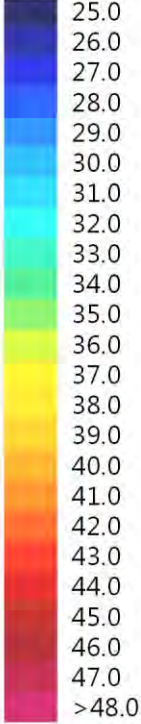
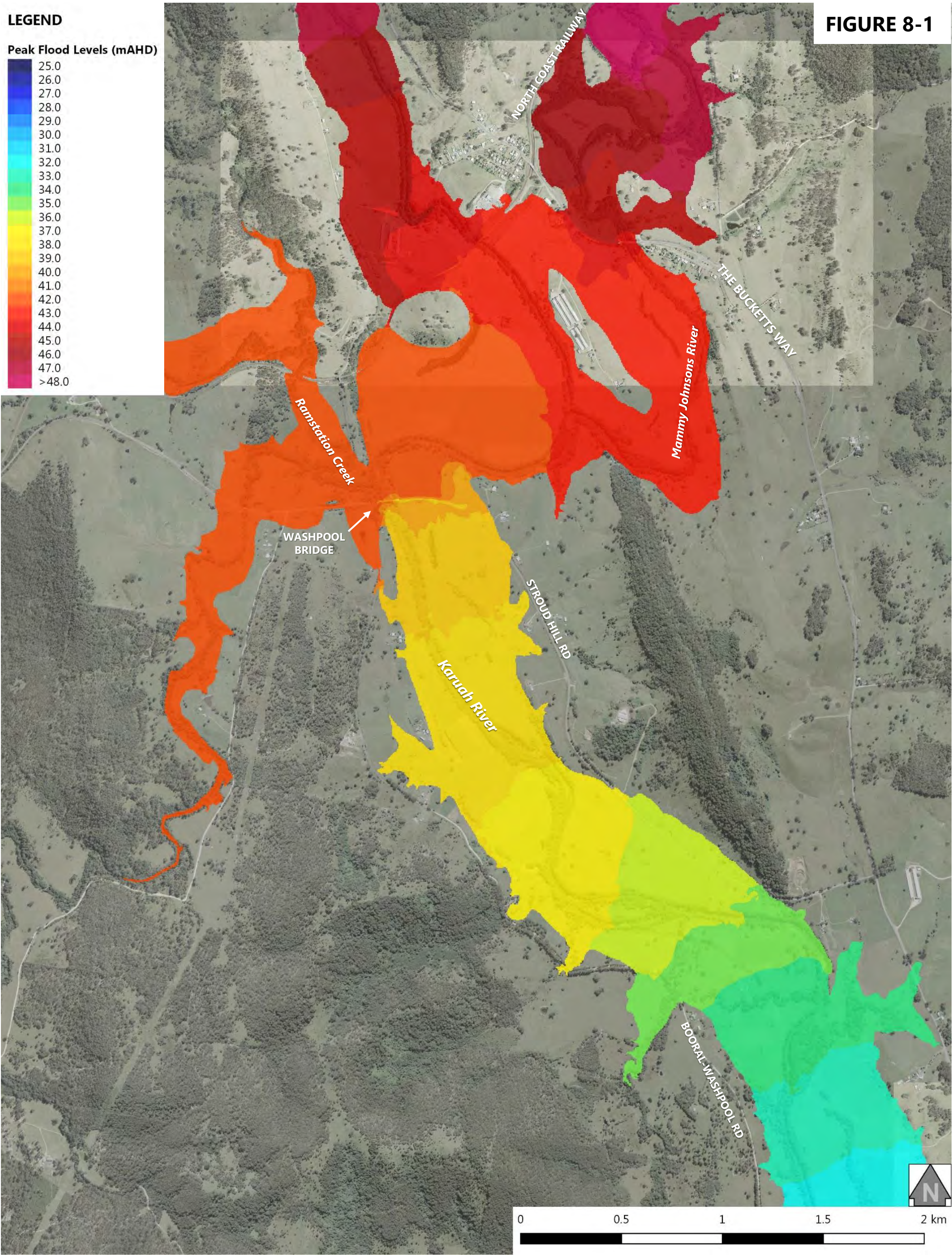


FIGURE 8-1





LEGEND

Peak Flood Levels (mAHD)

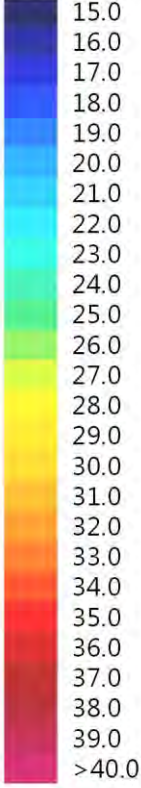
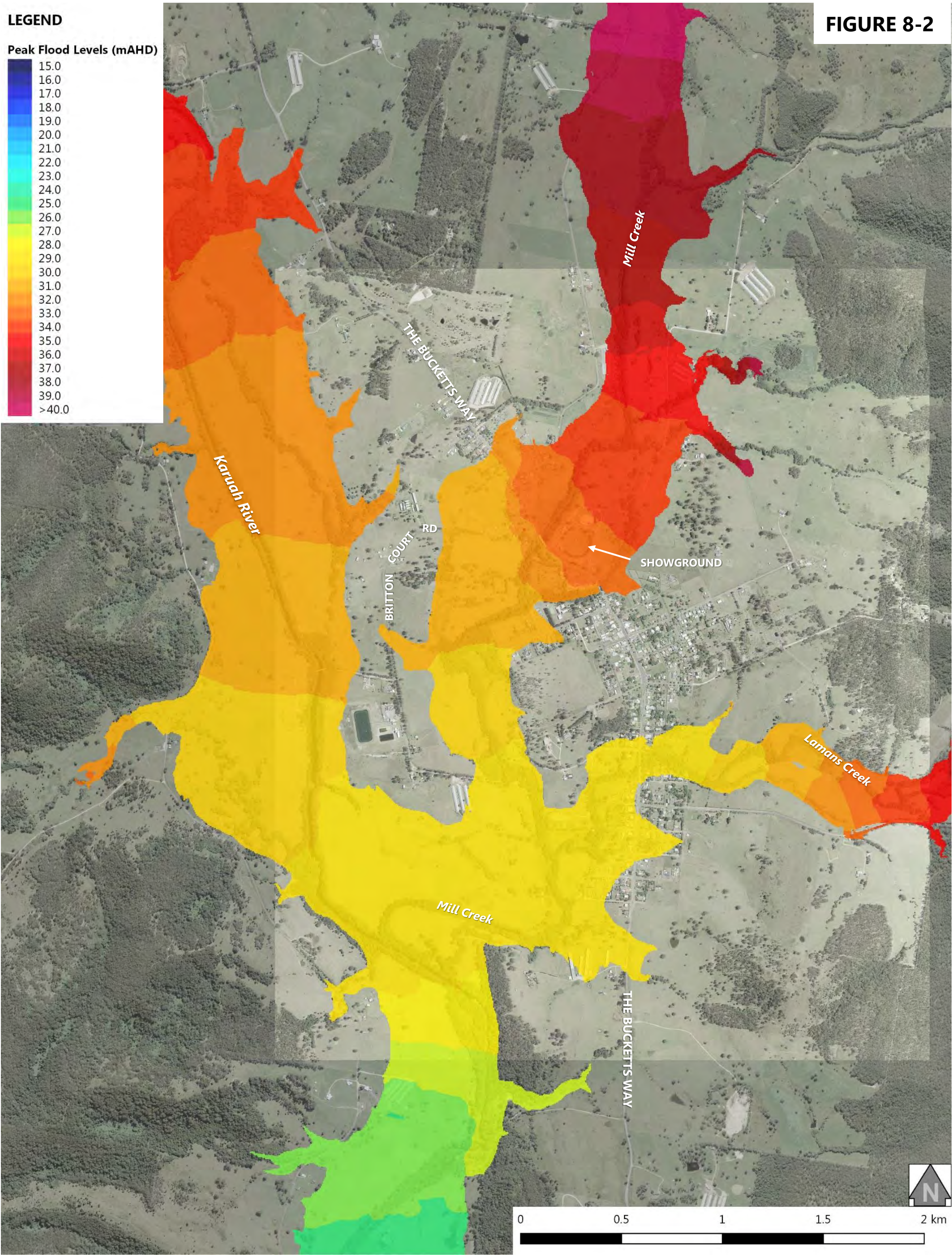


FIGURE 8-2





LEGEND

Peak Flood Levels (mAHD)

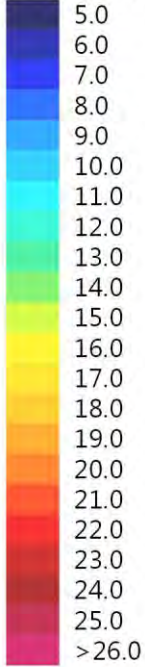
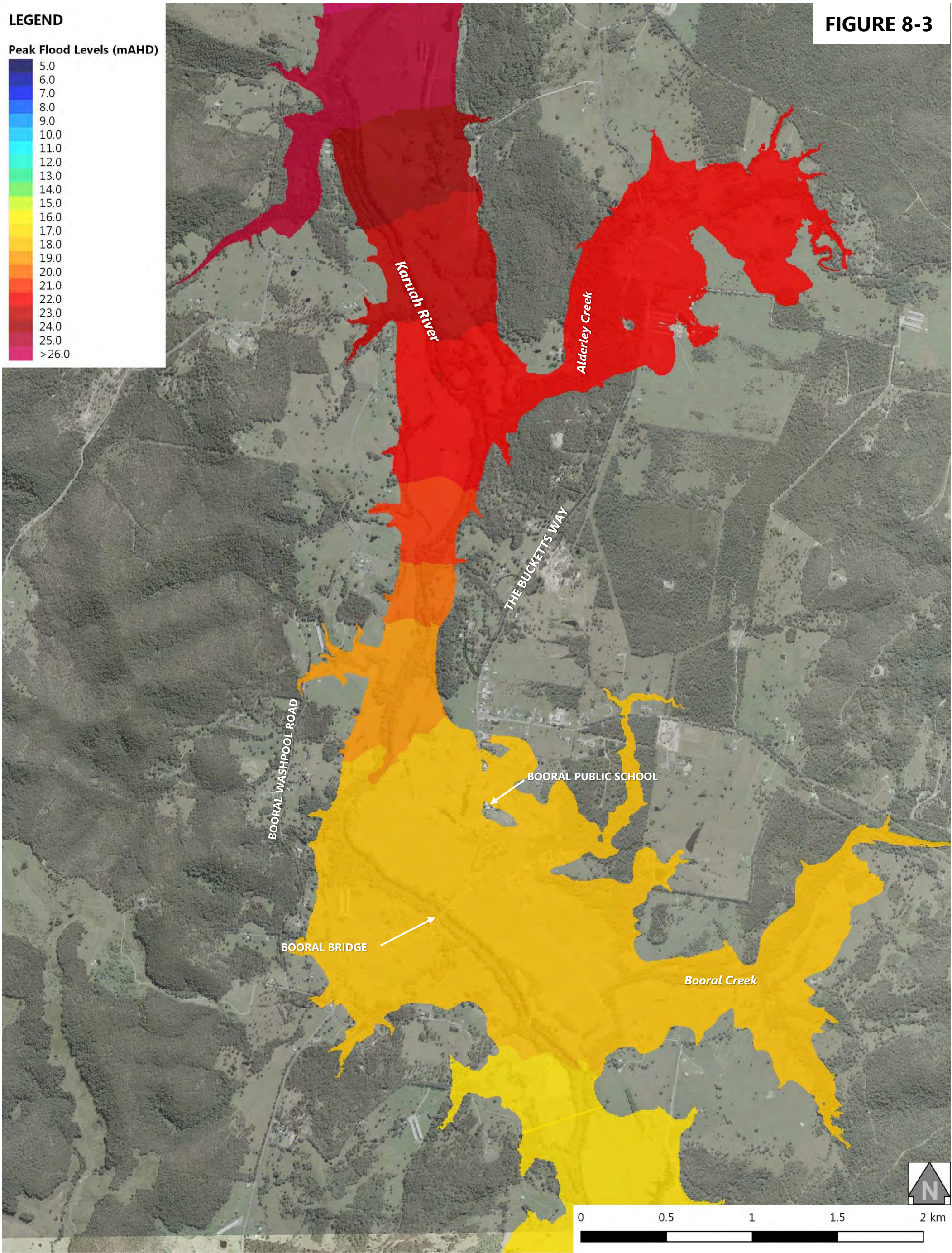


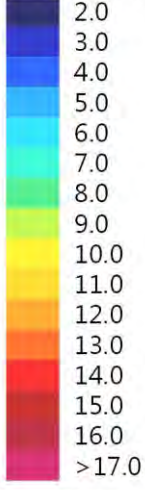
FIGURE 8-3



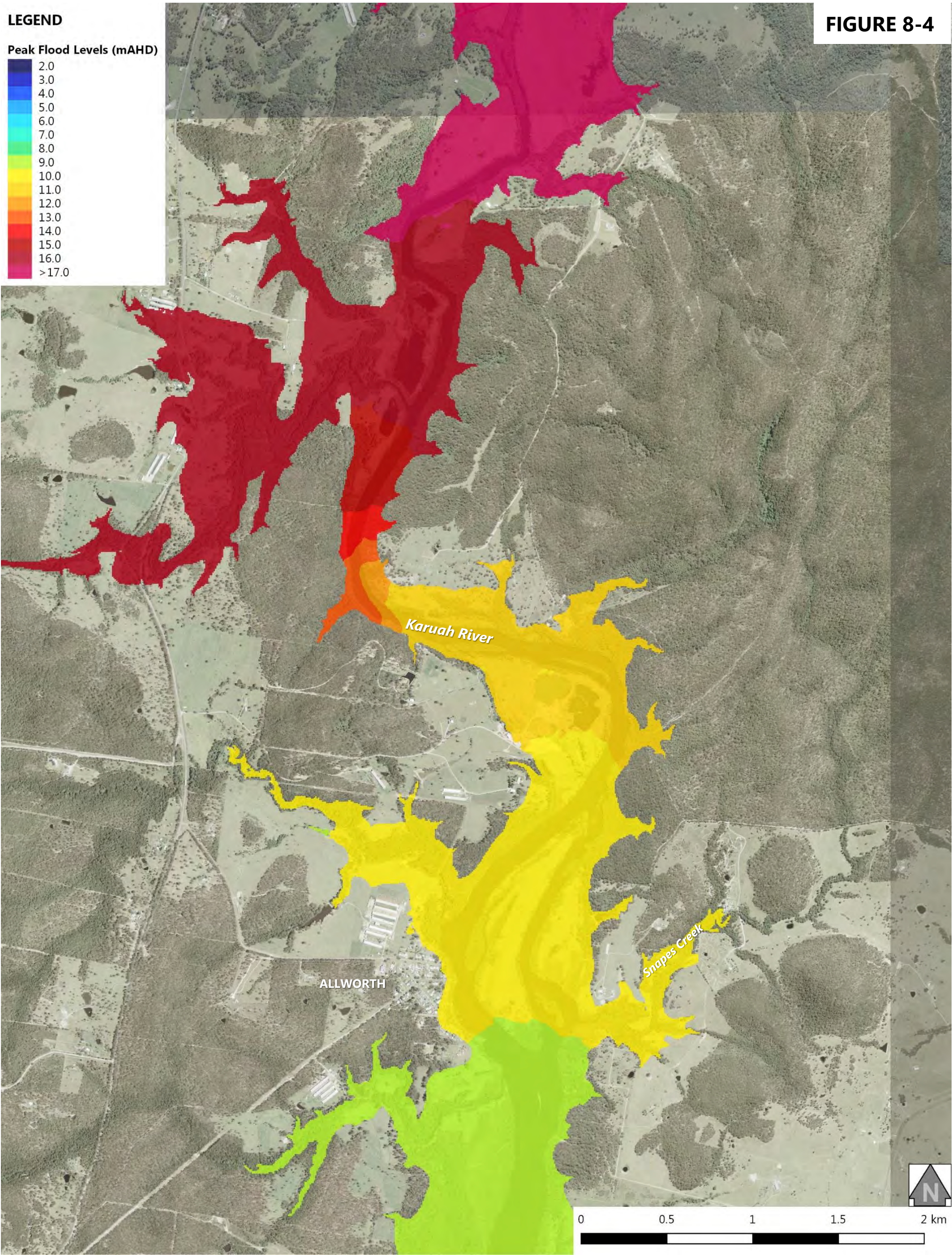


**LEGEND**

Peak Flood Levels (mAHD)

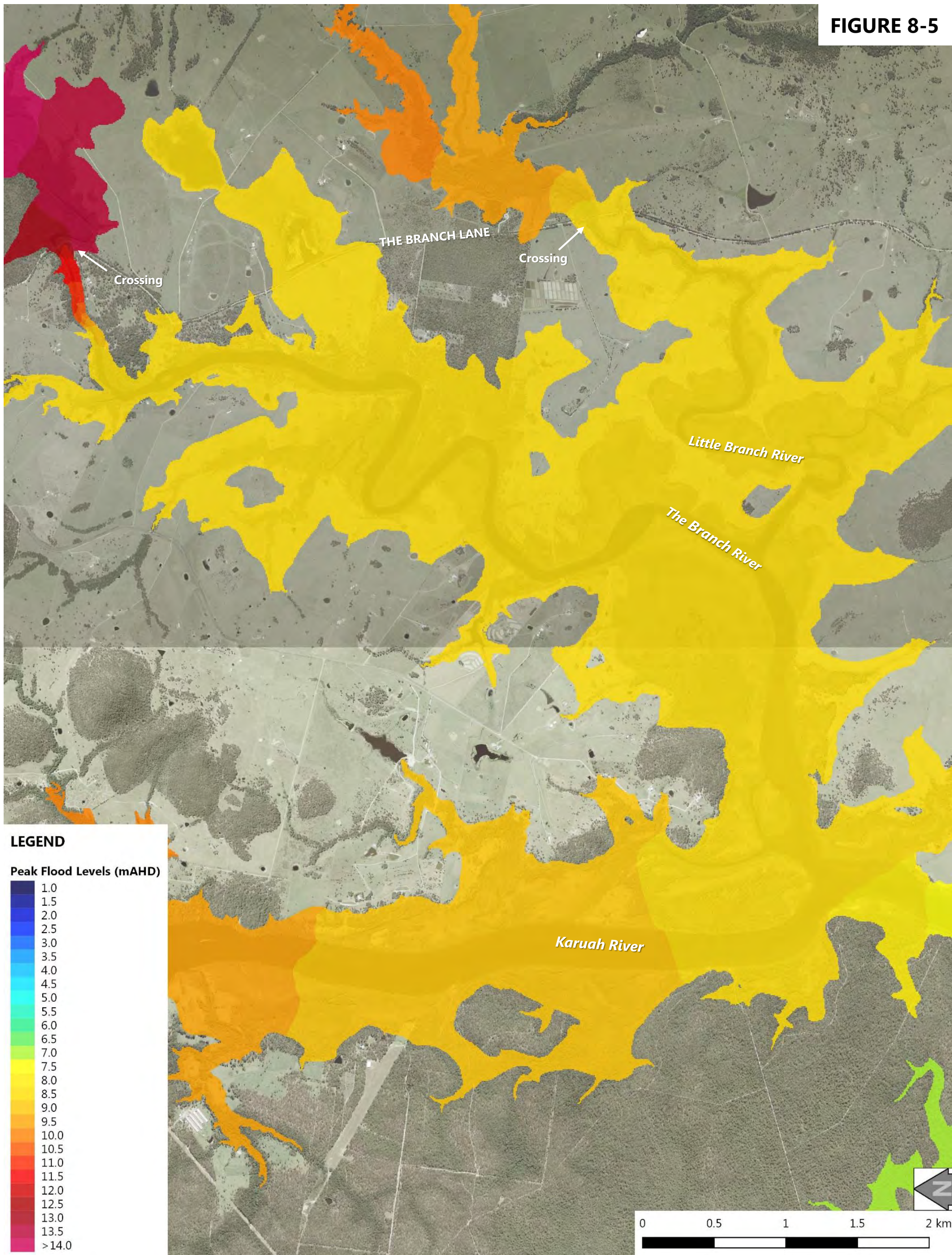


**FIGURE 8-4**





**FIGURE 8-5**



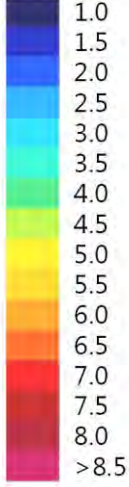
**Advisian**

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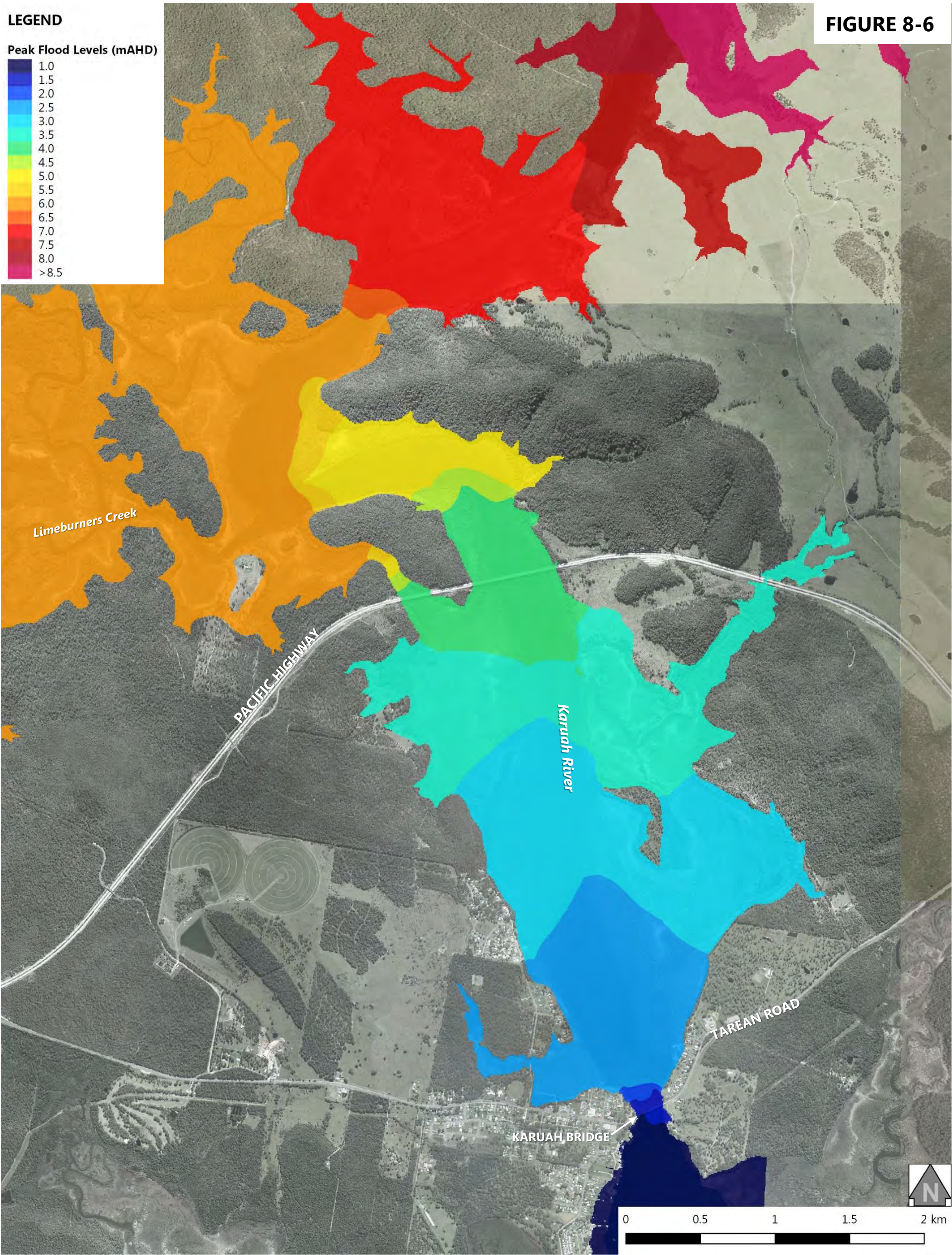


**LEGEND**

Peak Flood Levels (mAHD)



**FIGURE 8-6**





LEGEND

Peak Flood Depth (m)

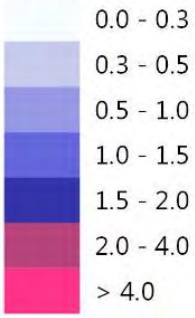
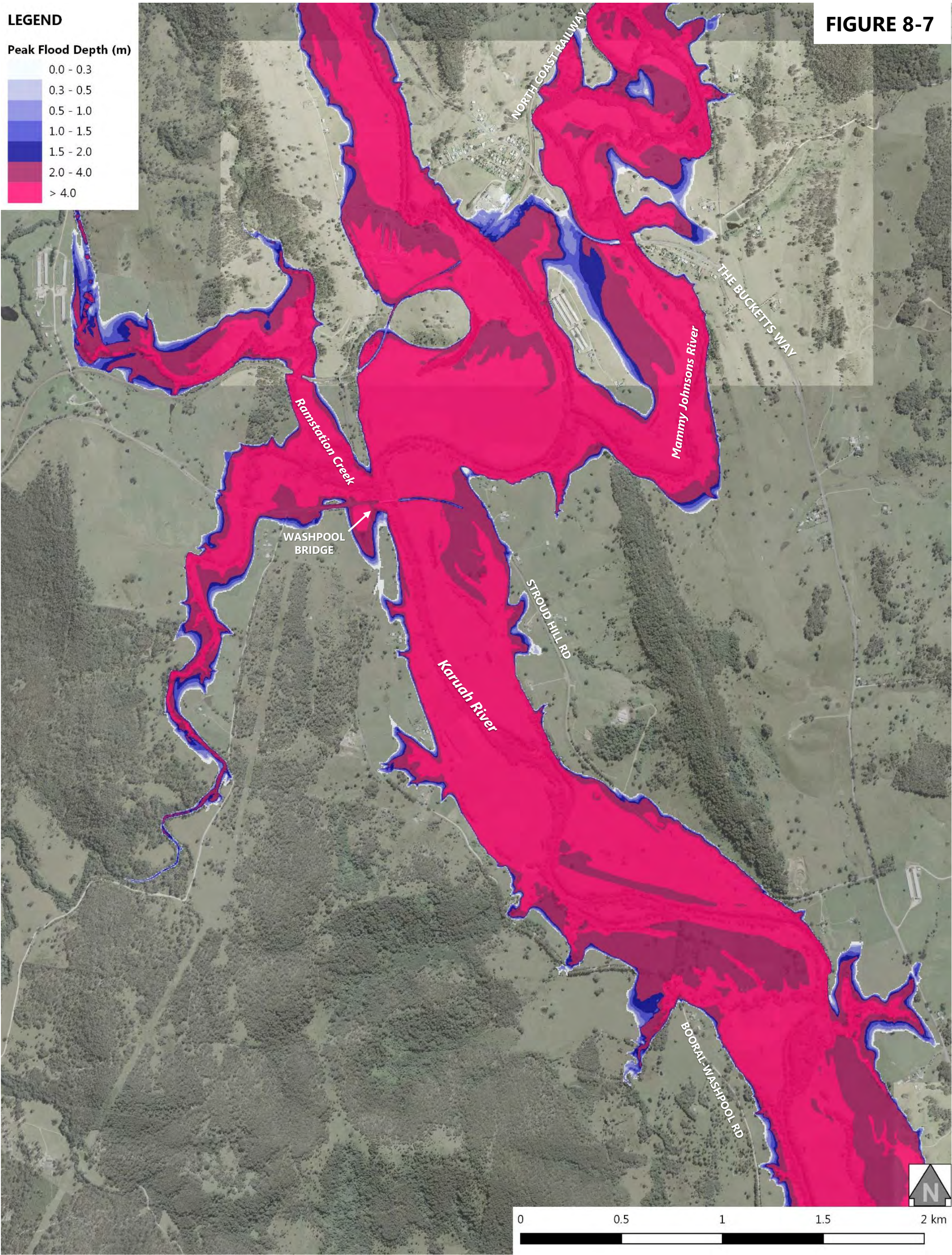


FIGURE 8-7





LEGEND

Peak Flood Depth (m)

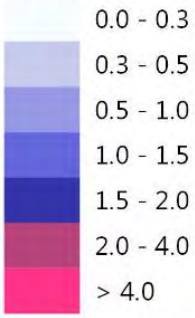
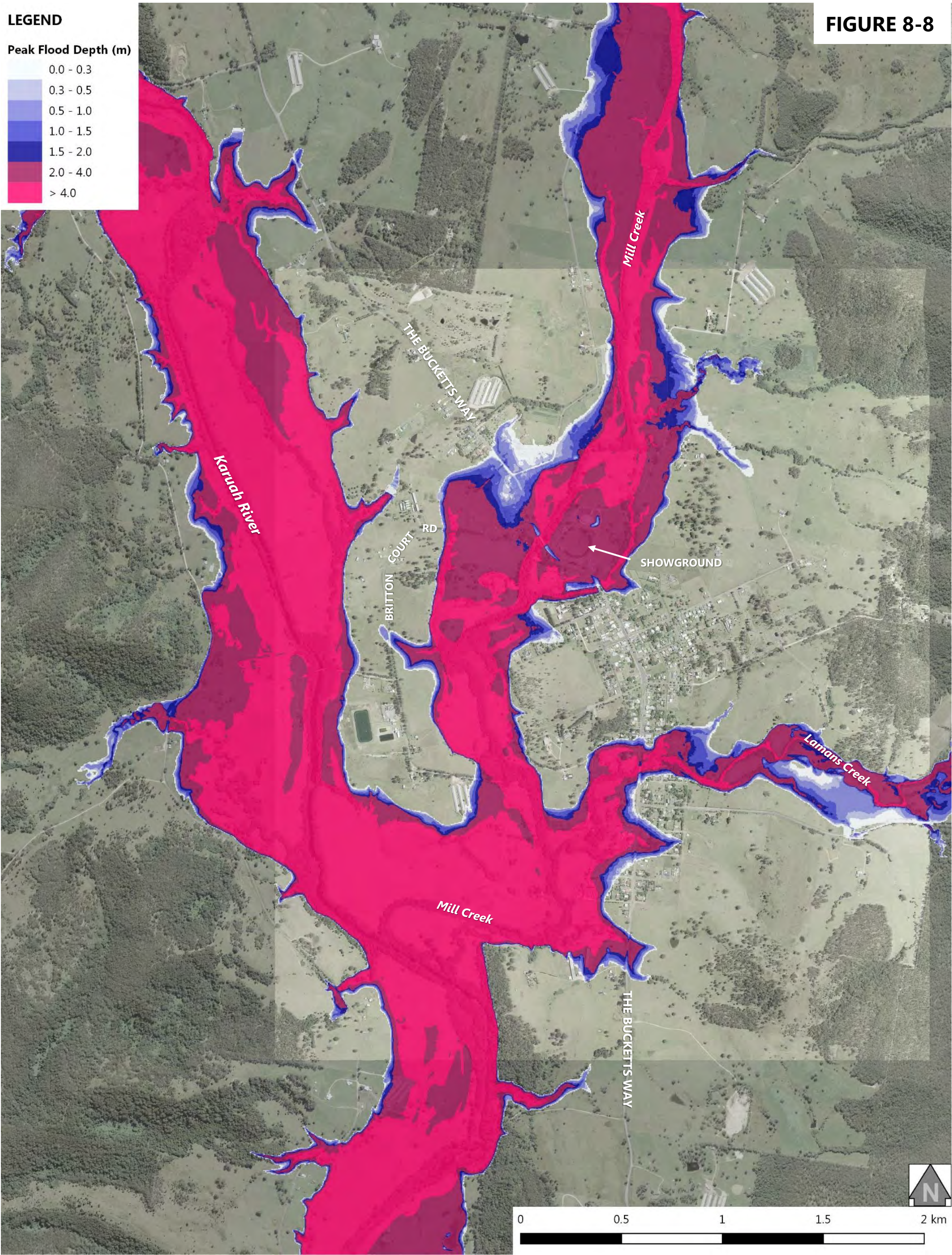


FIGURE 8-8





LEGEND

Peak Flood Depth (m)

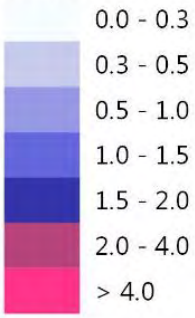
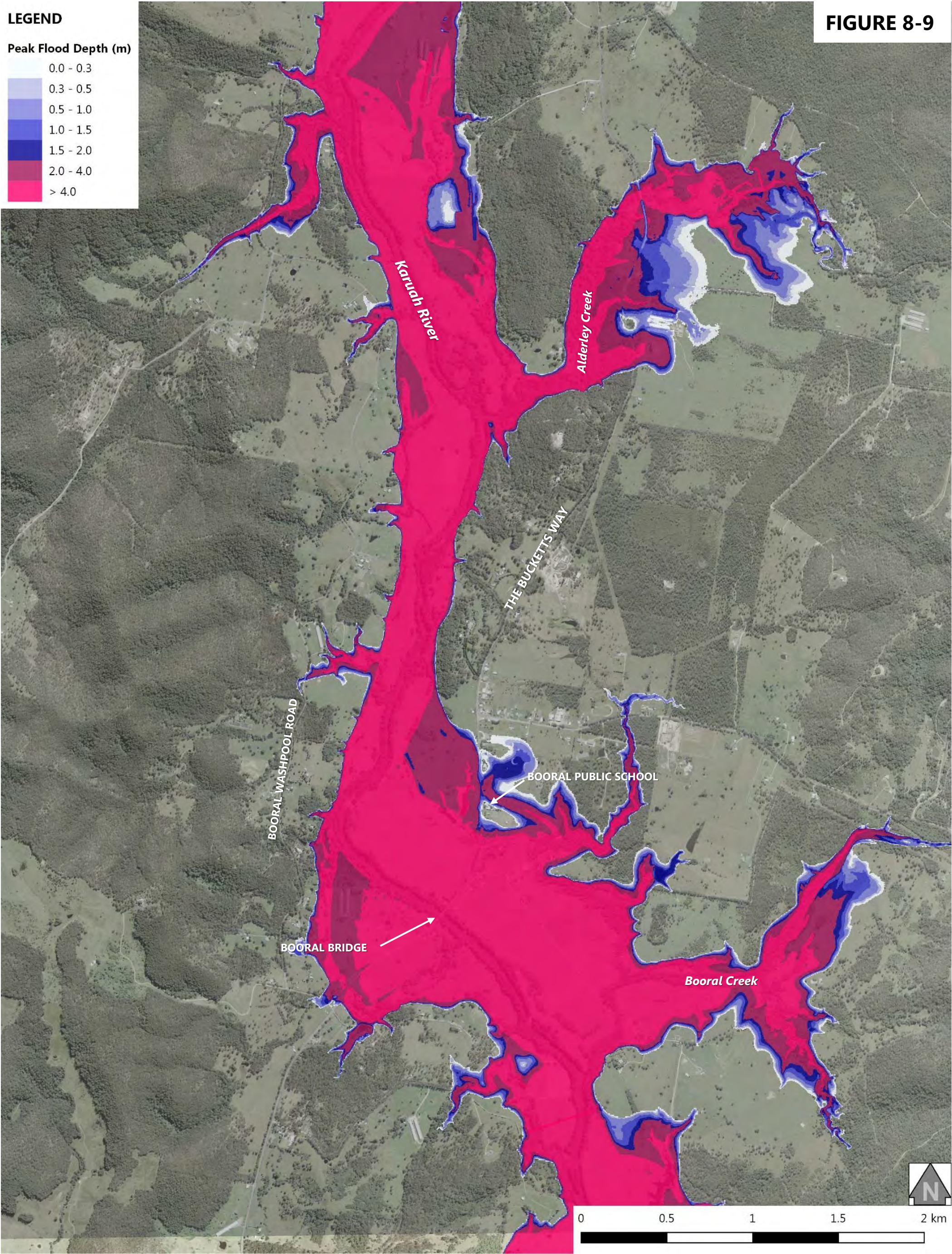


FIGURE 8-9





LEGEND

Peak Flood Depth (m)

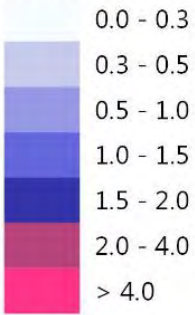
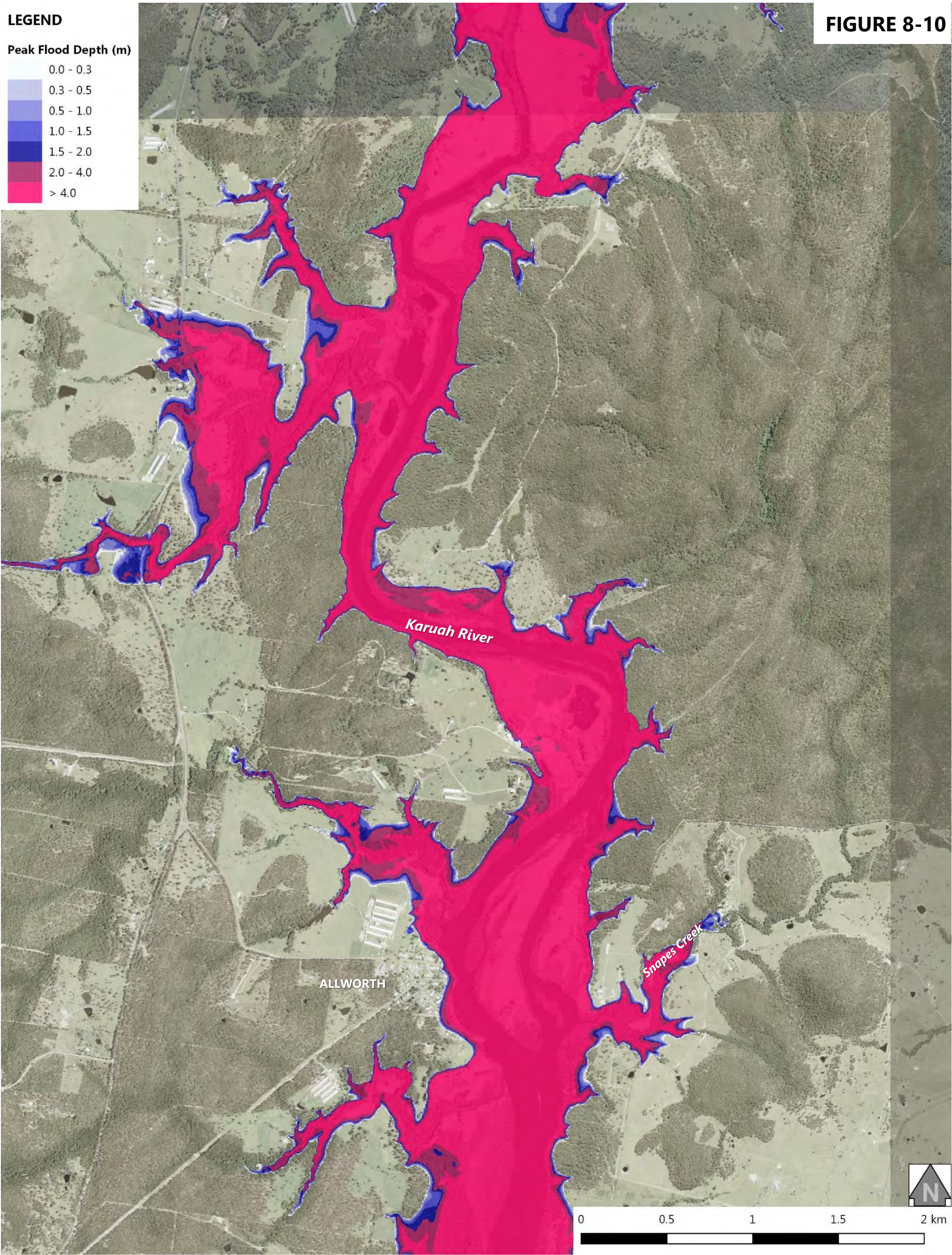
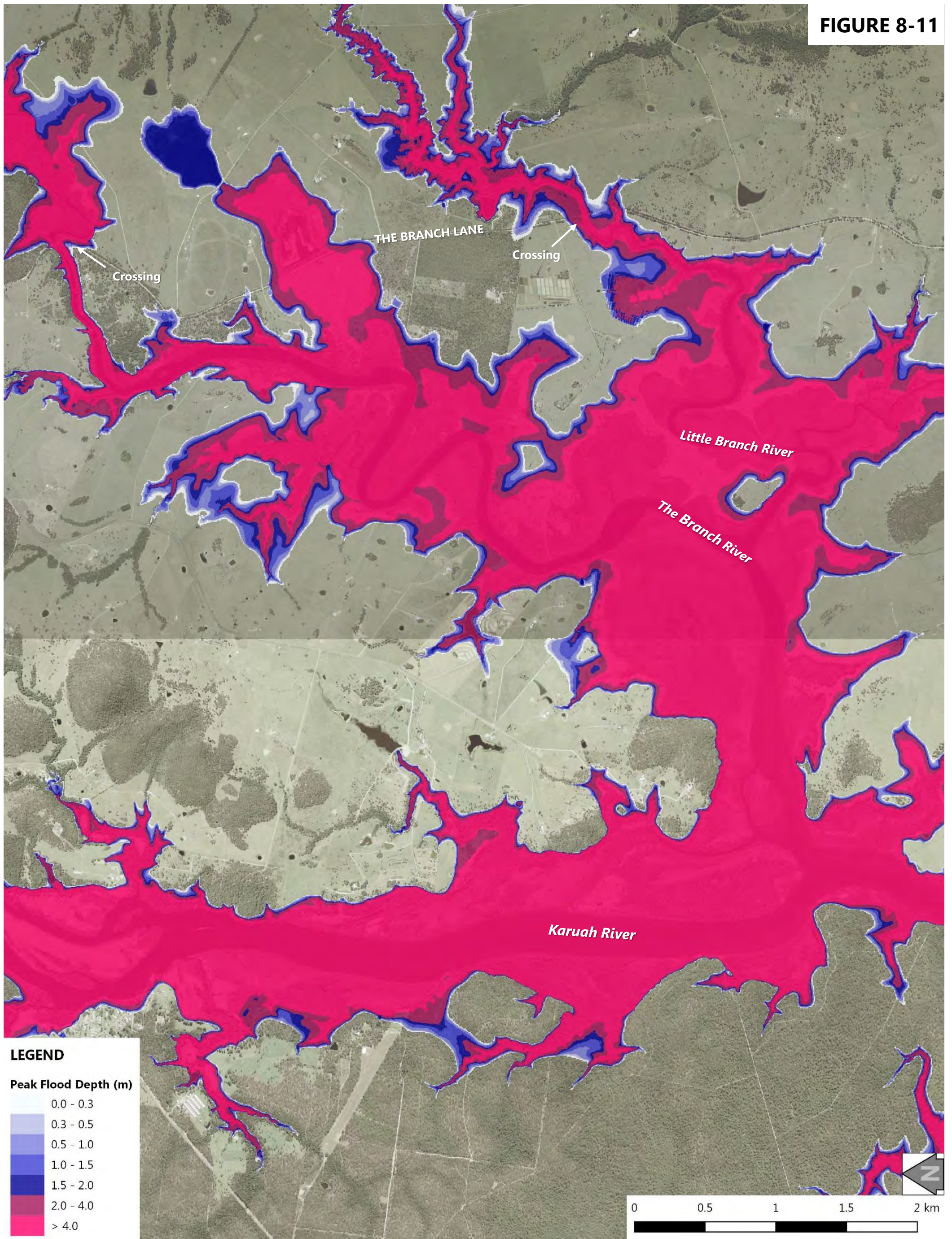


FIGURE 8-10





**FIGURE 8-11**



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301015-03792 – Karuah River and Stroud Flood Study Update – Volume 2  
Flood Mapping\_A3\_Portrait\_PMF\_RevA.pdf

**PROBABLE MAXIMUM FLOOD DESIGN FLOOD EVENT  
PEAK FLOOD DEPTH AT THE BRANCH**



LEGEND

Peak Flood Depth (m)

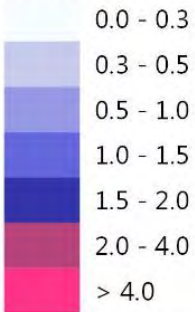
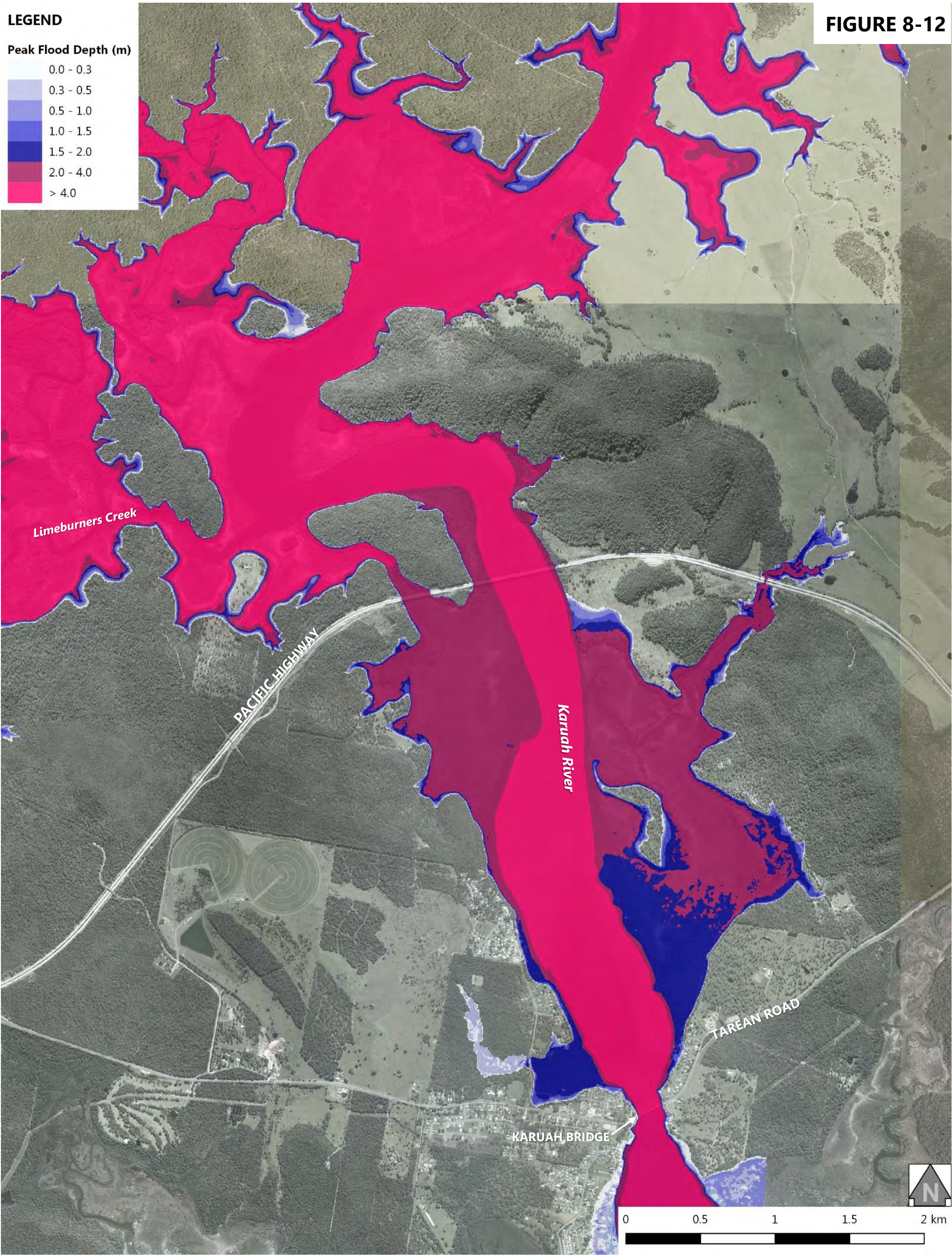


FIGURE 8-12





LEGEND

Peak Flood Velocity (m/s)

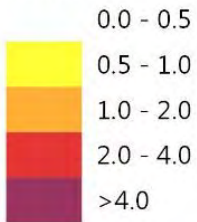
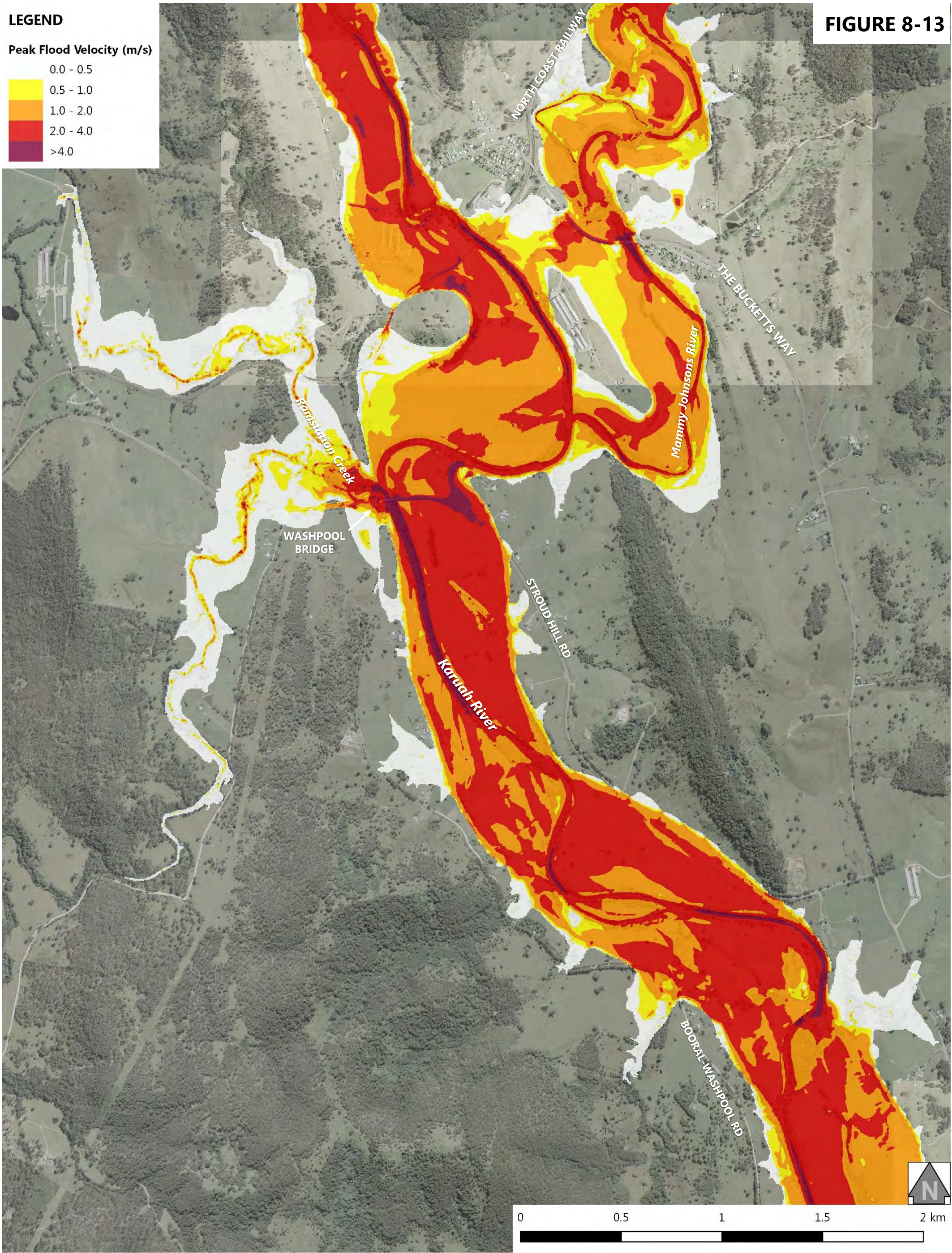


FIGURE 8-13





LEGEND

Peak Flood Velocity (m/s)

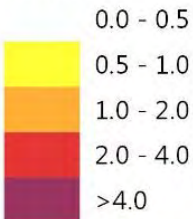
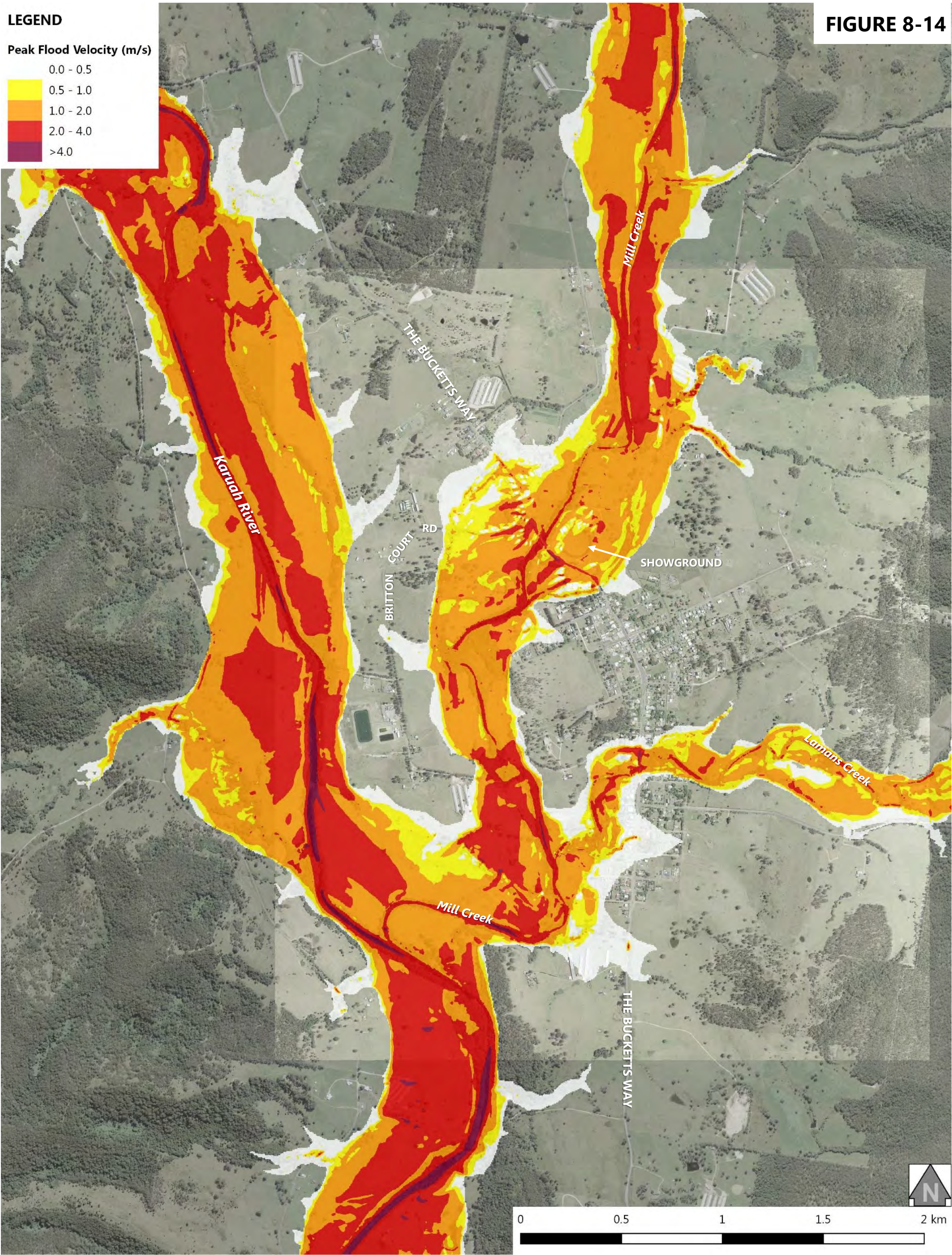


FIGURE 8-14





LEGEND

Peak Flood Velocity (m/s)

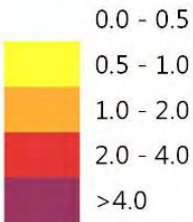
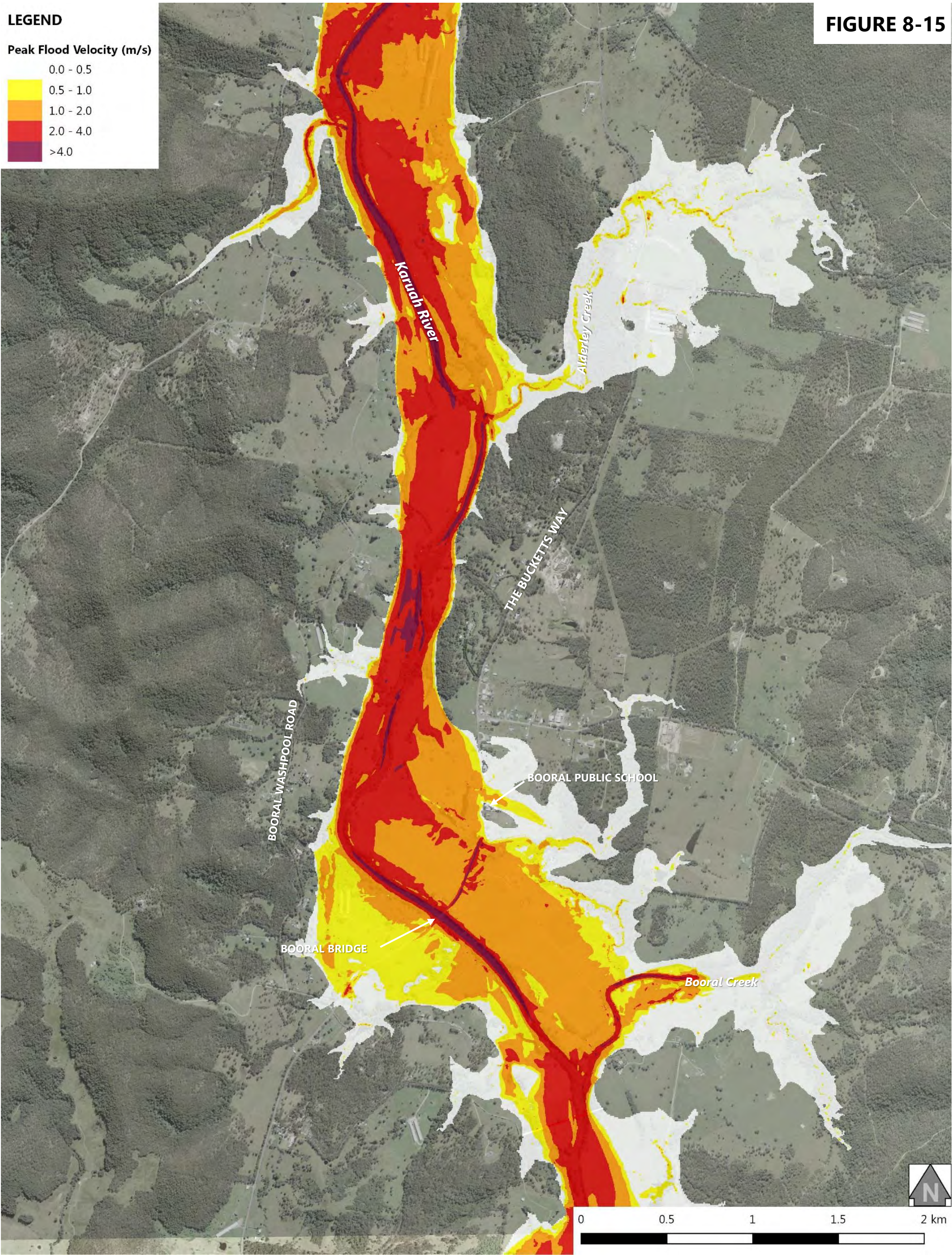


FIGURE 8-15





LEGEND

Peak Flood Velocity (m/s)

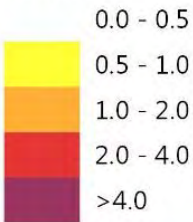


FIGURE 8-16

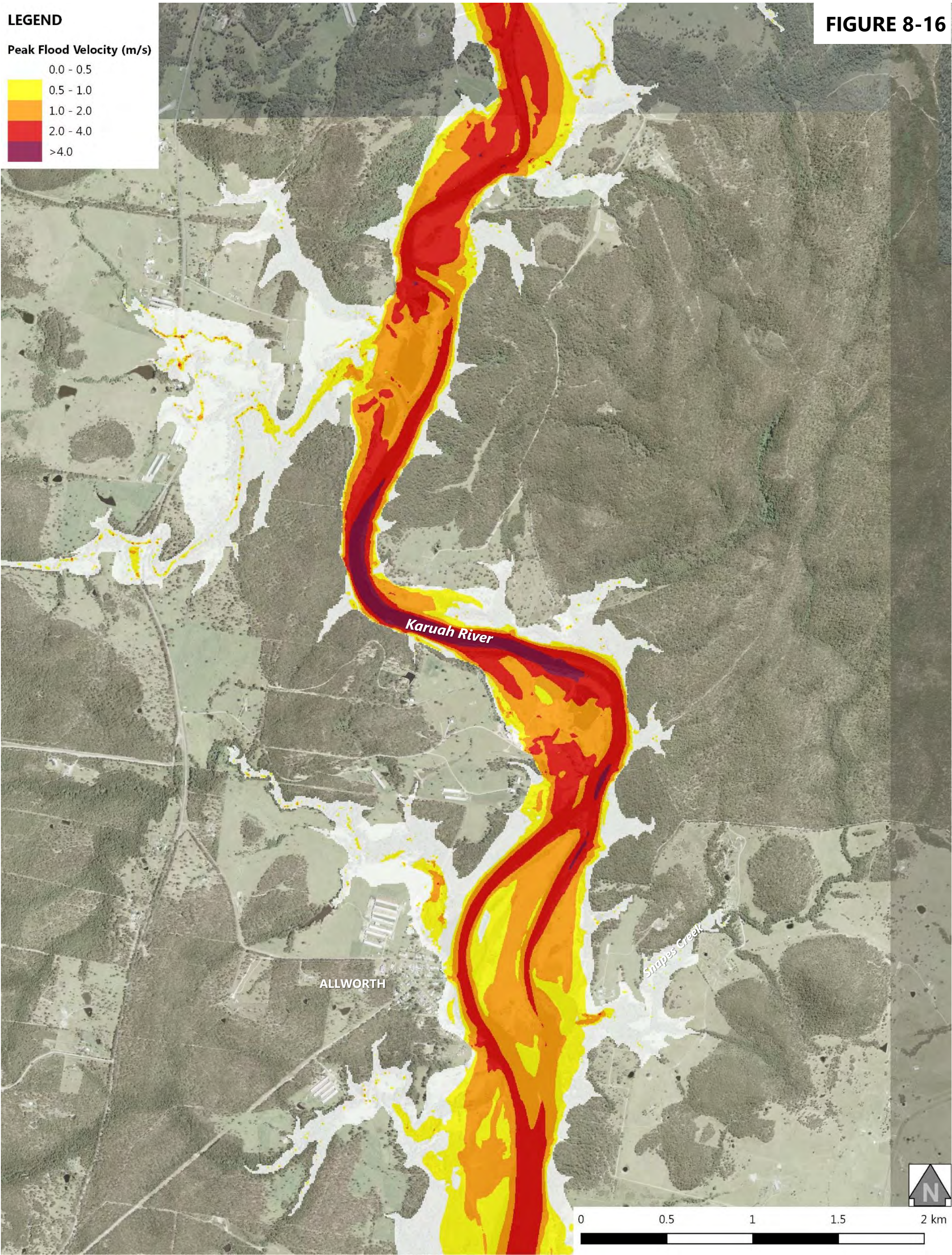
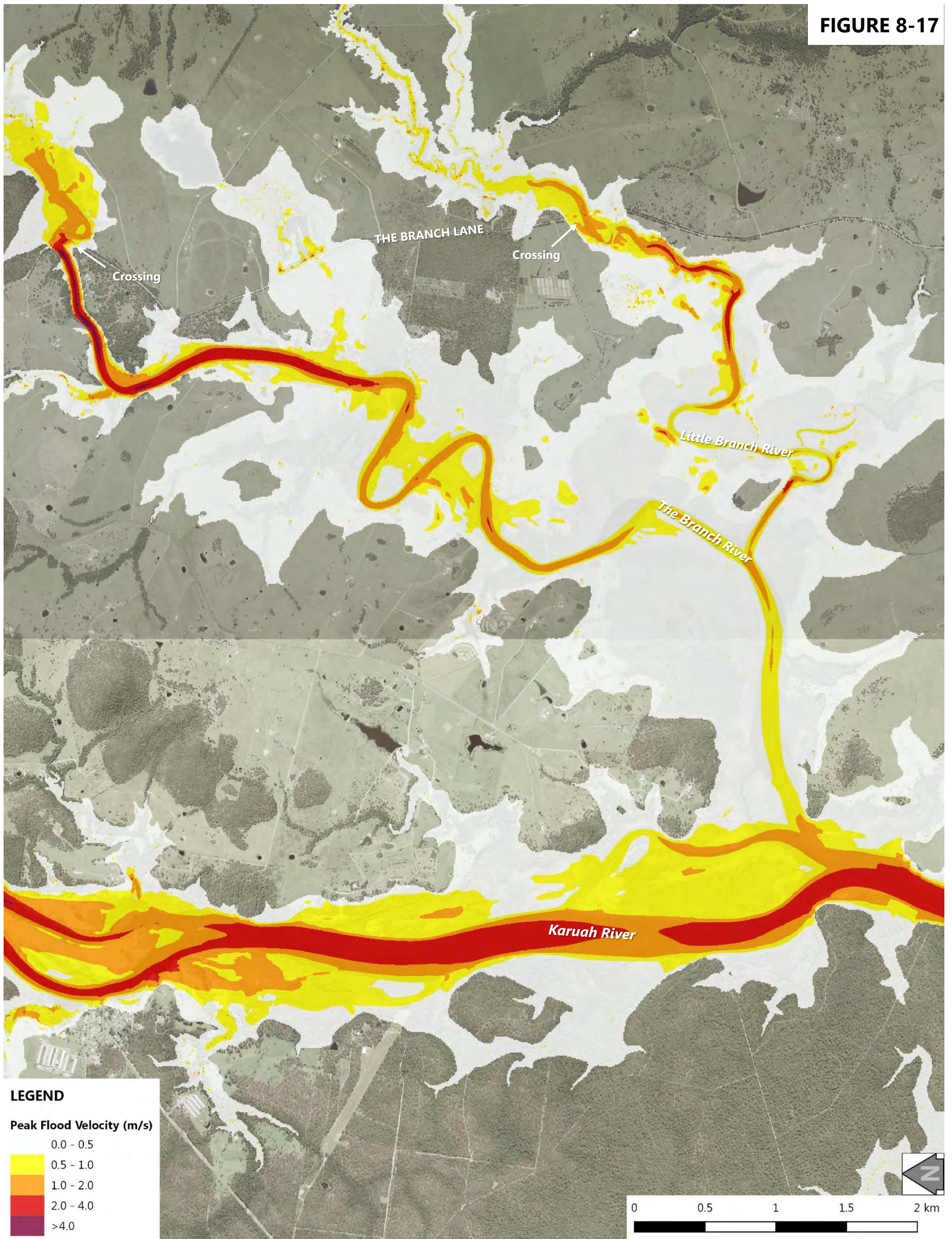


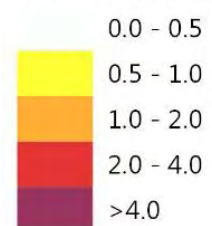


FIGURE 8-17



LEGEND

Peak Flood Velocity (m/s)



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**PROBABLE MAXIMUM FLOOD DESIGN FLOOD EVENT  
PEAK FLOOD VELOCITY AT THE BRANCH**



LEGEND

Peak Flood Velocity (m/s)

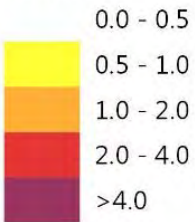


FIGURE 8-18



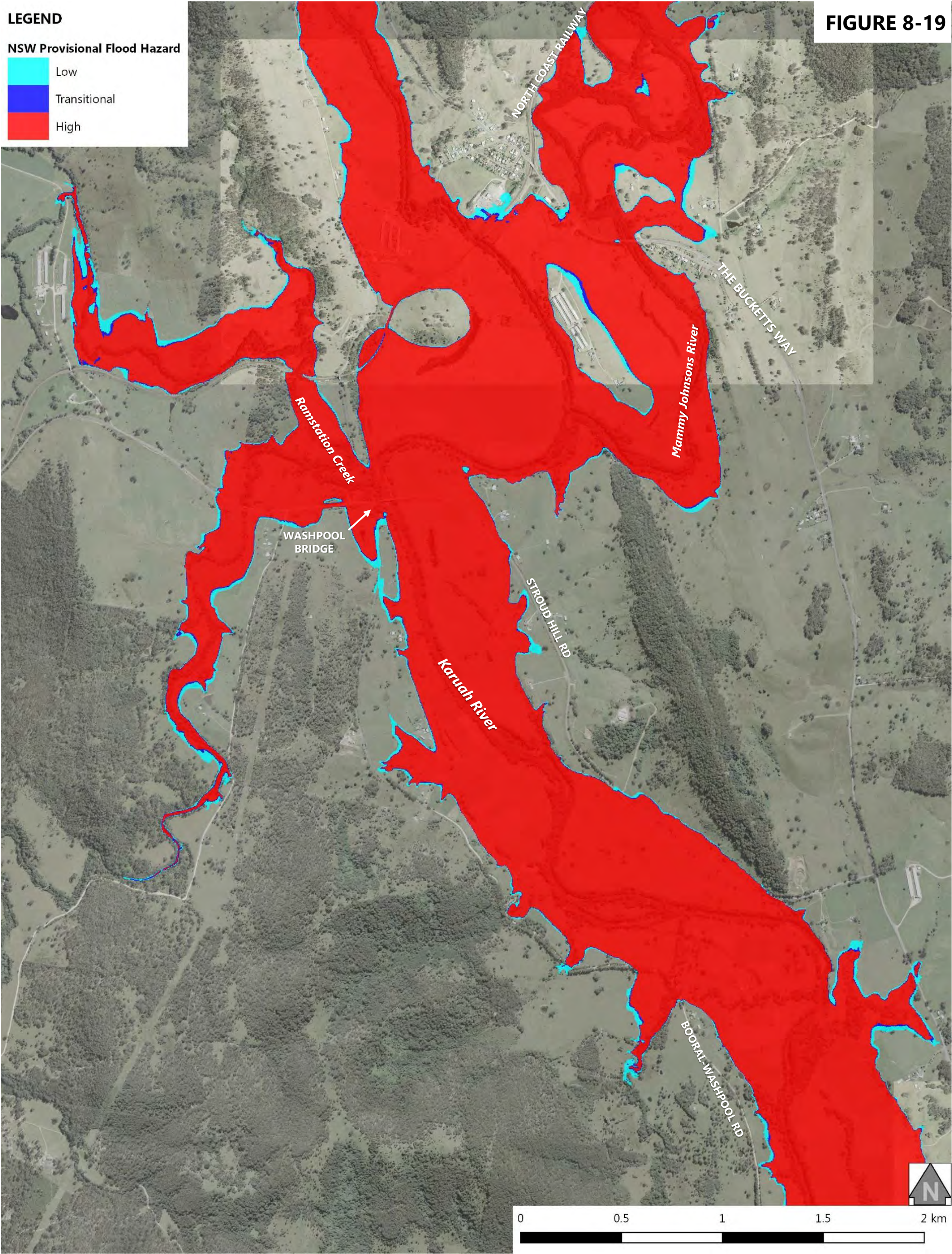


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 8-19



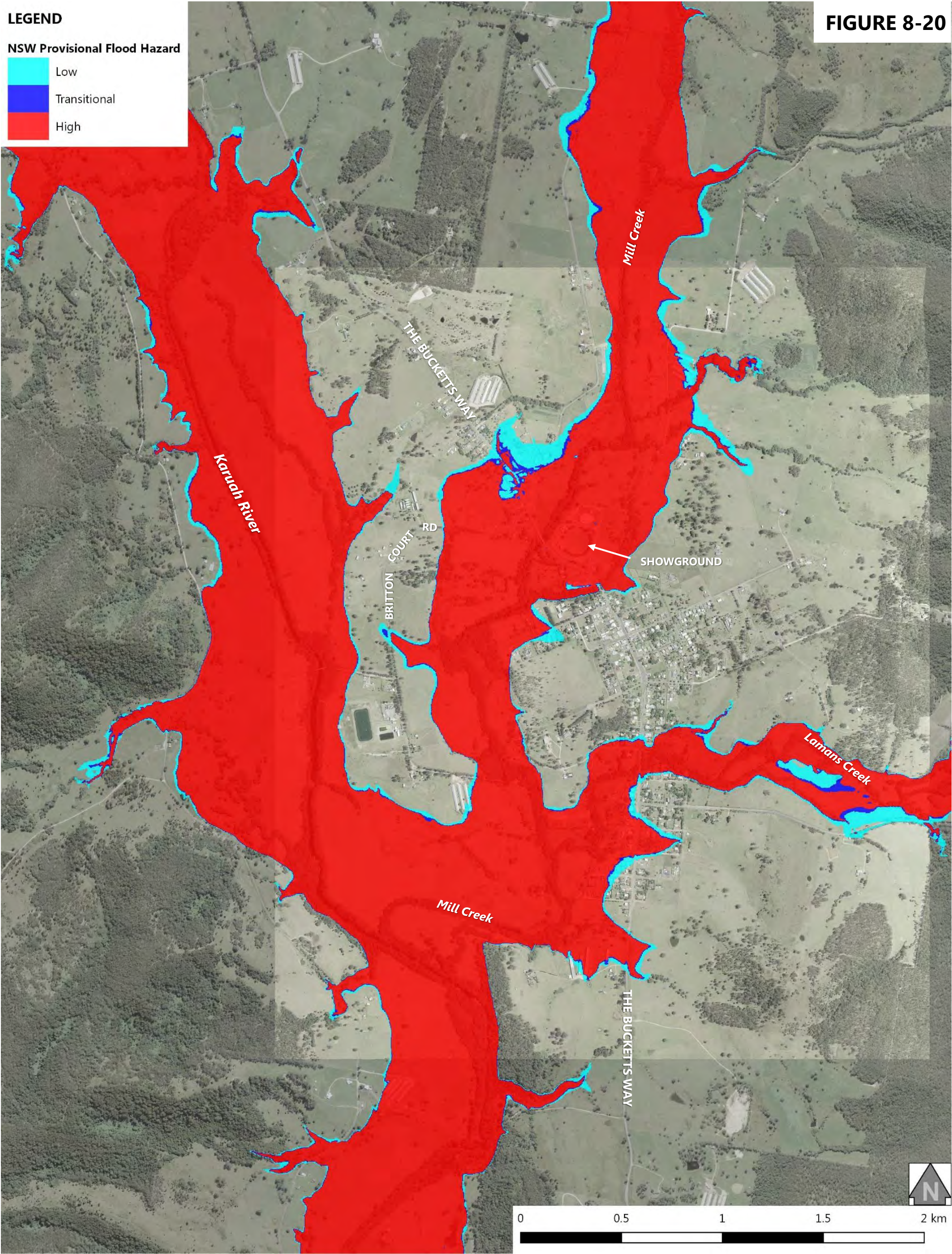


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 8-20



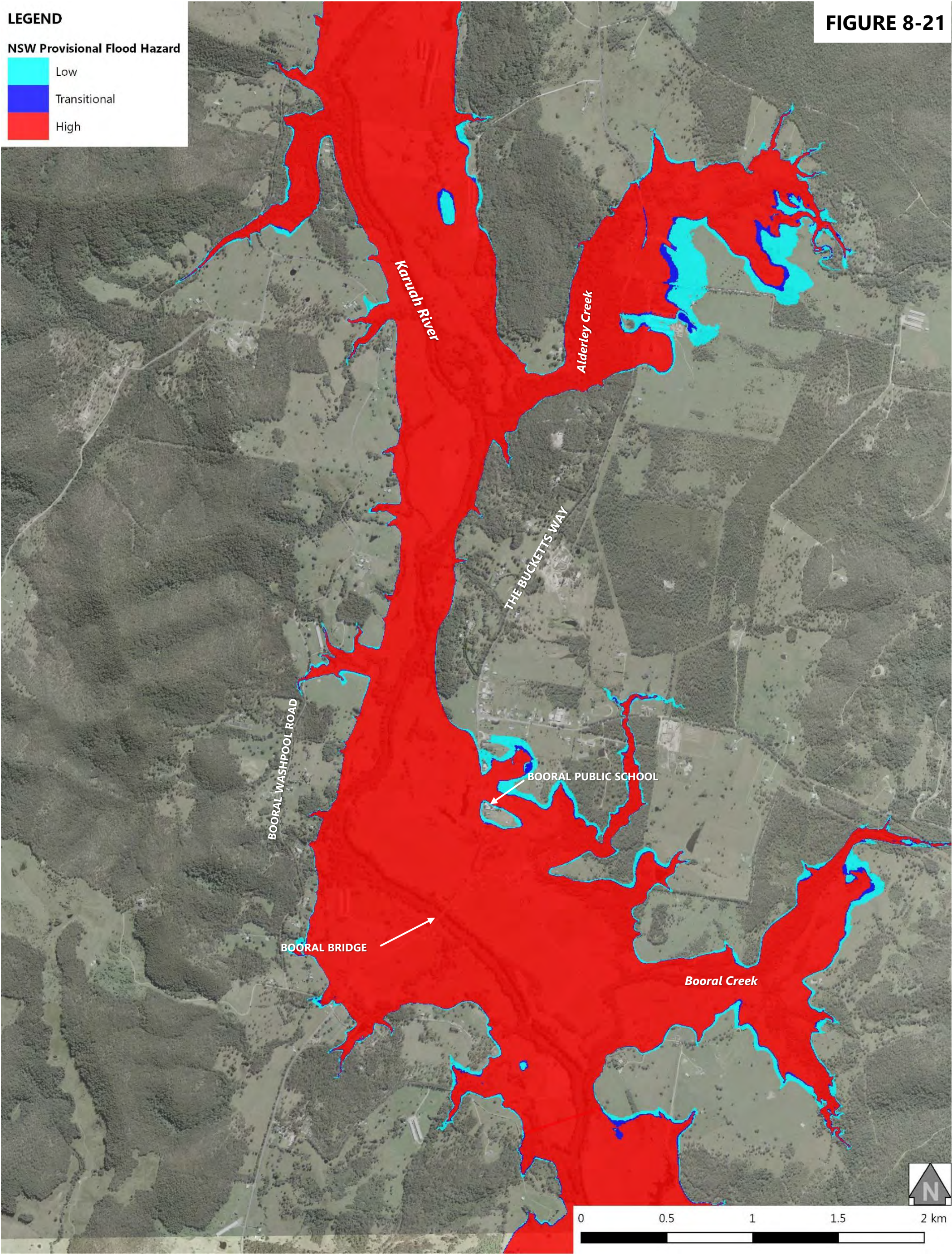


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 8-21





LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 8-22

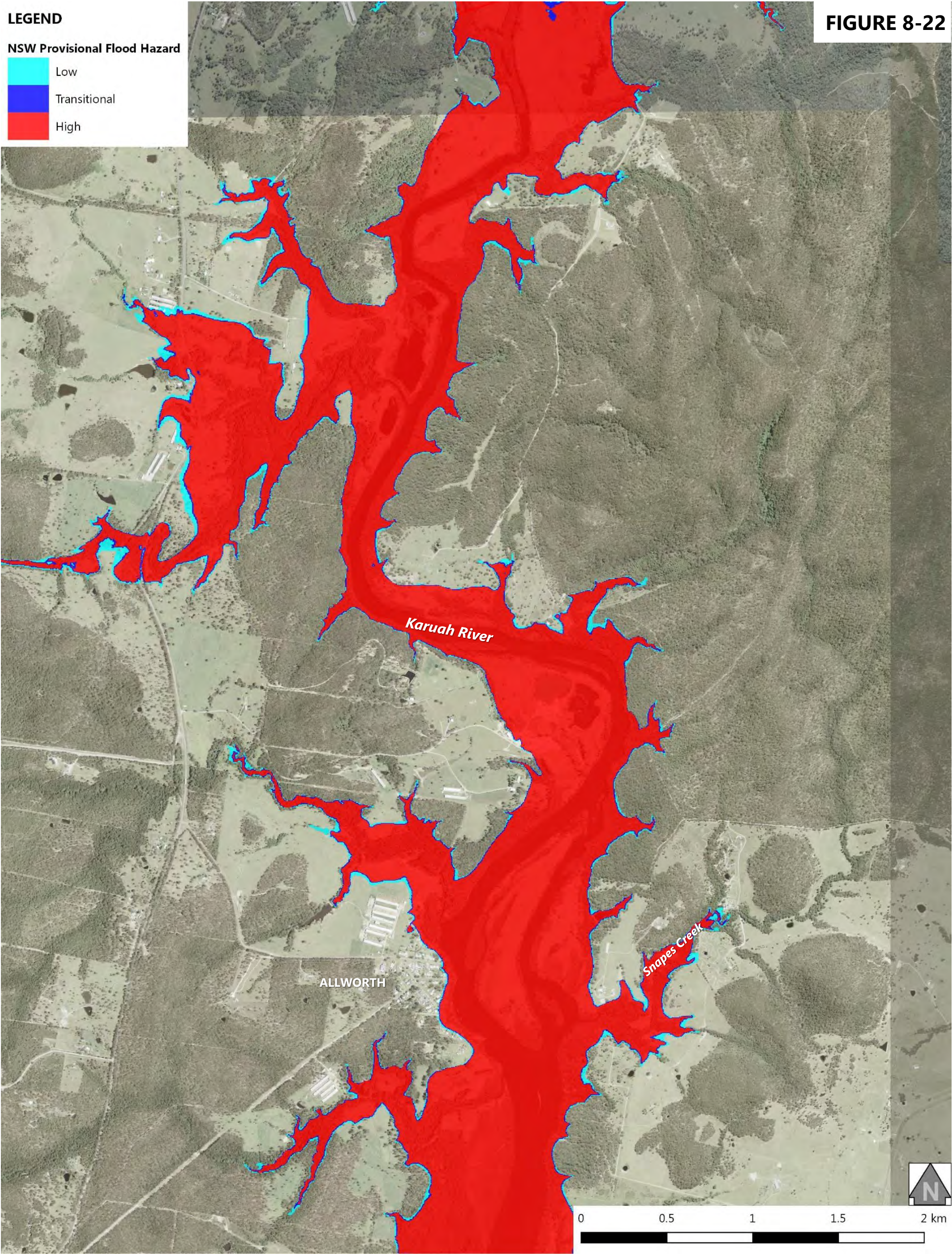




FIGURE 8-23



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**PROBABLE MAXIMUM FLOOD DESIGN FLOOD EVENT  
NSW PROVISIONAL FLOOD HAZARD AT THE BRANCH**

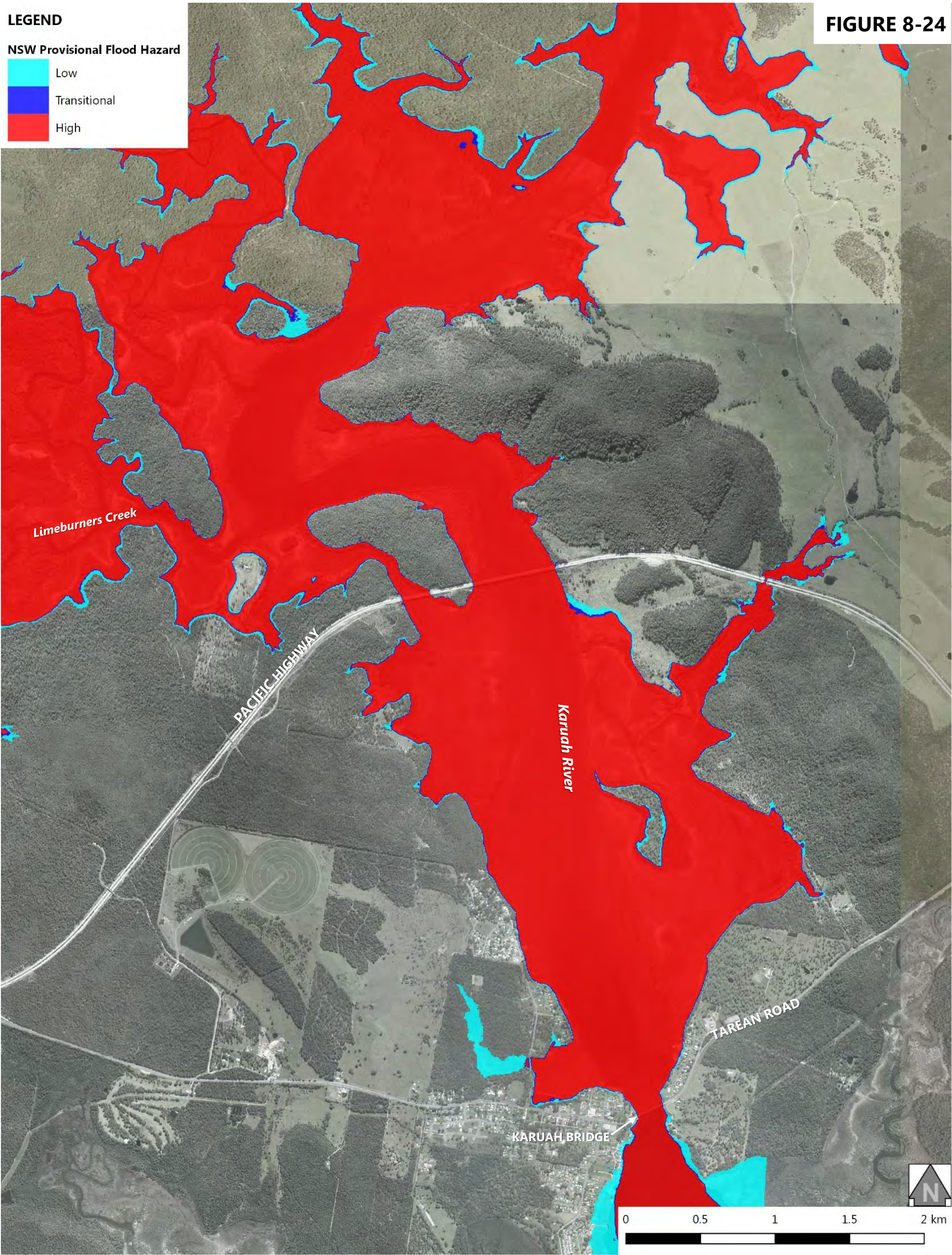


LEGEND

NSW Provisional Flood Hazard

- Low
- Transitional
- High

FIGURE 8-24



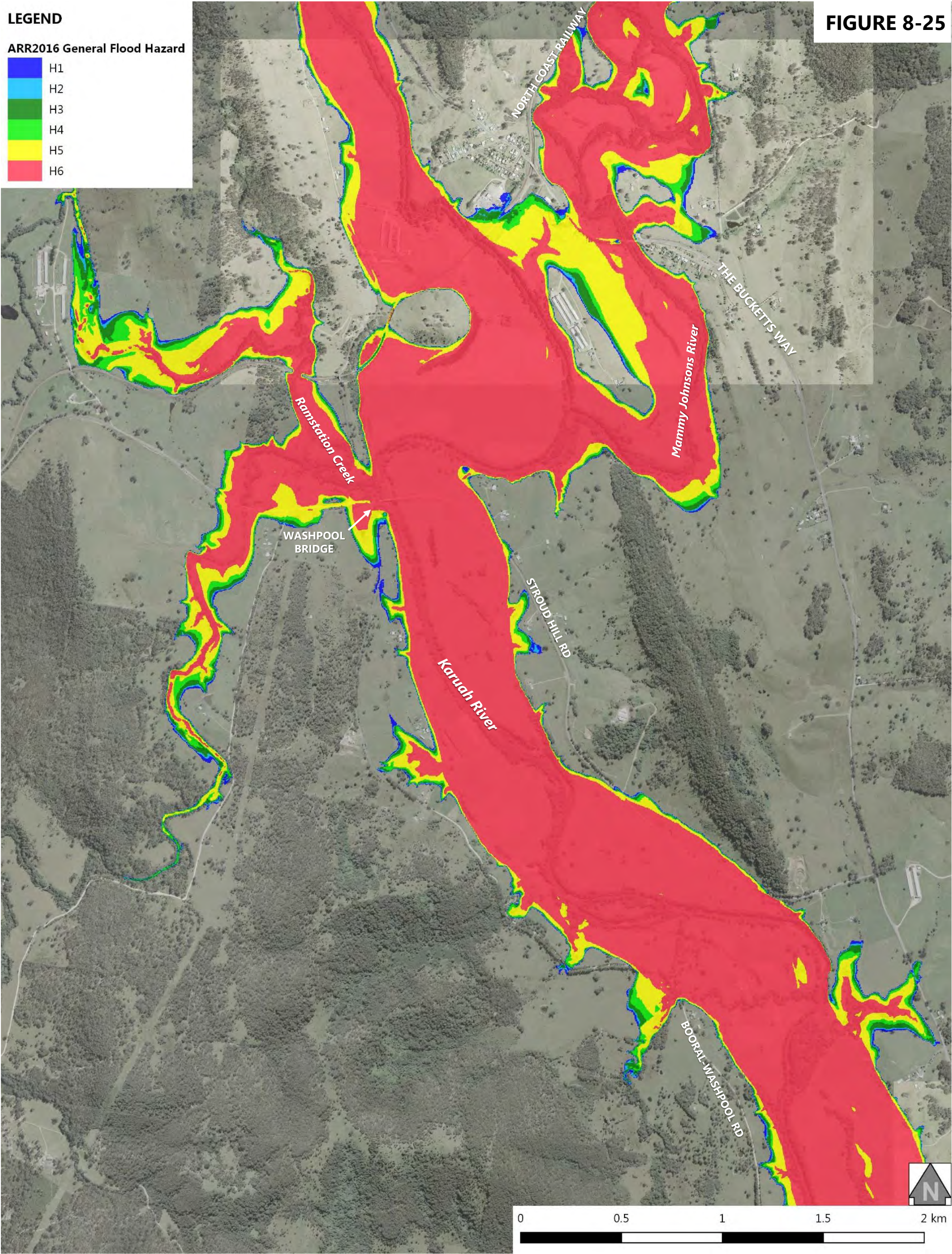


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 8-25



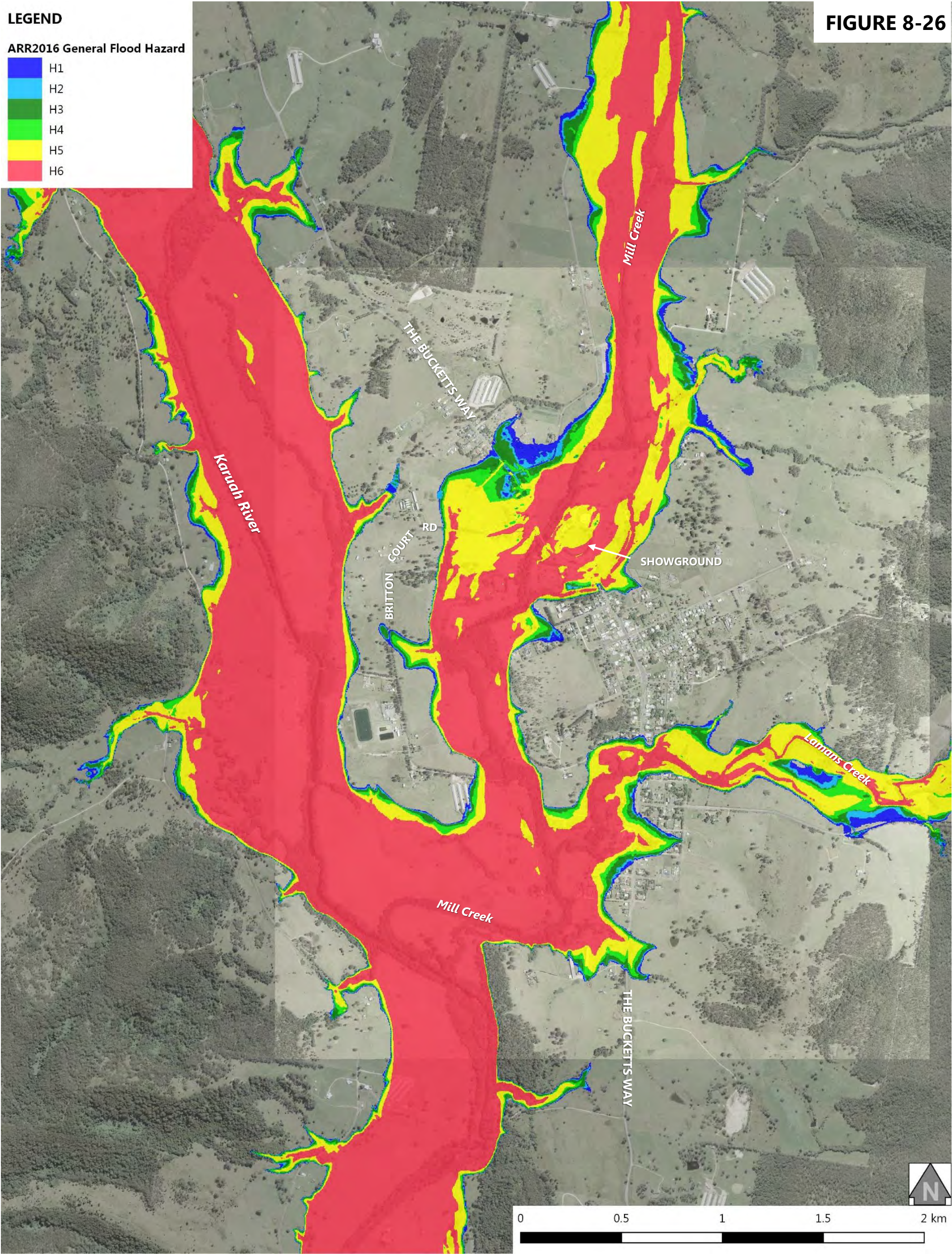


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 8-26



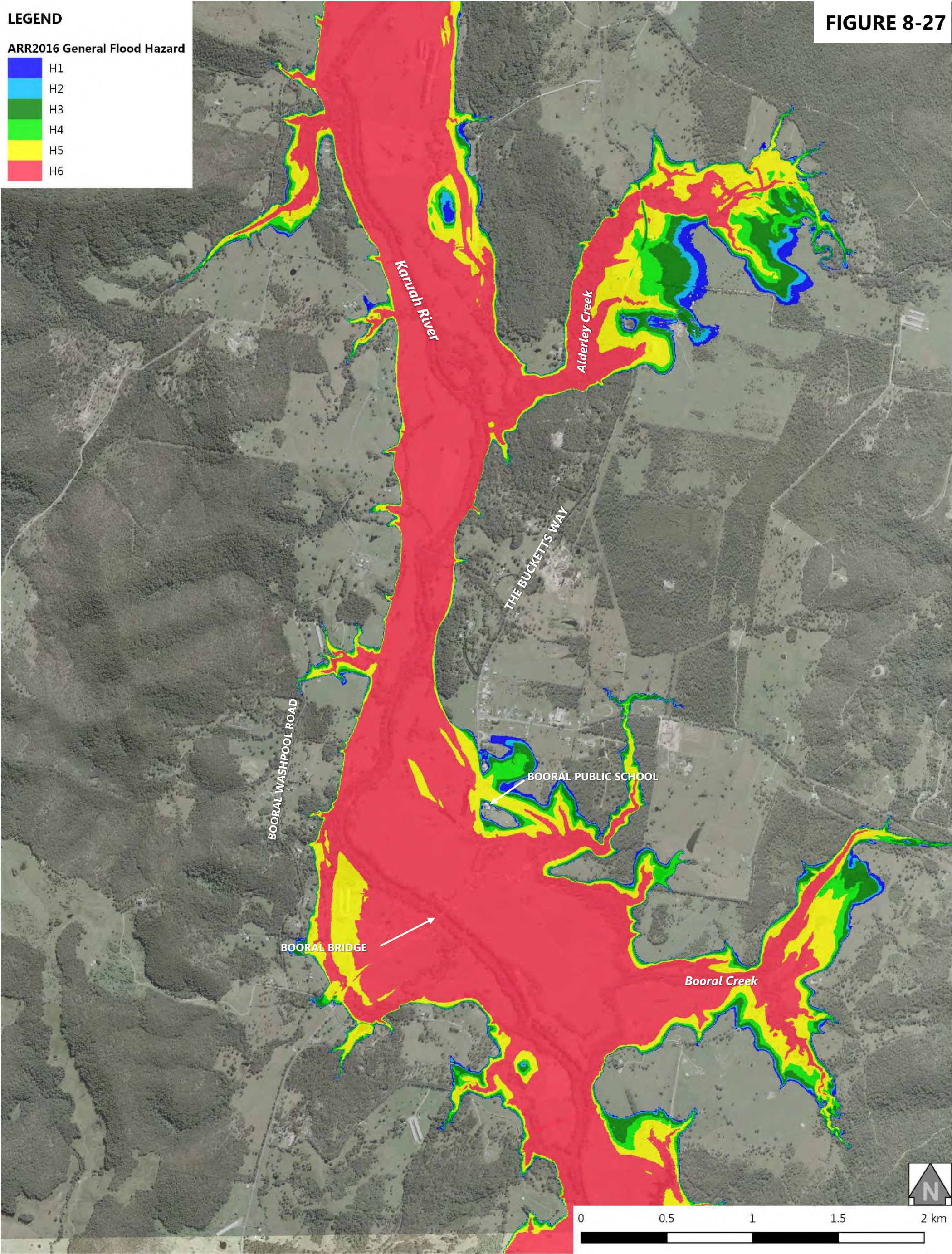


LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 8-27



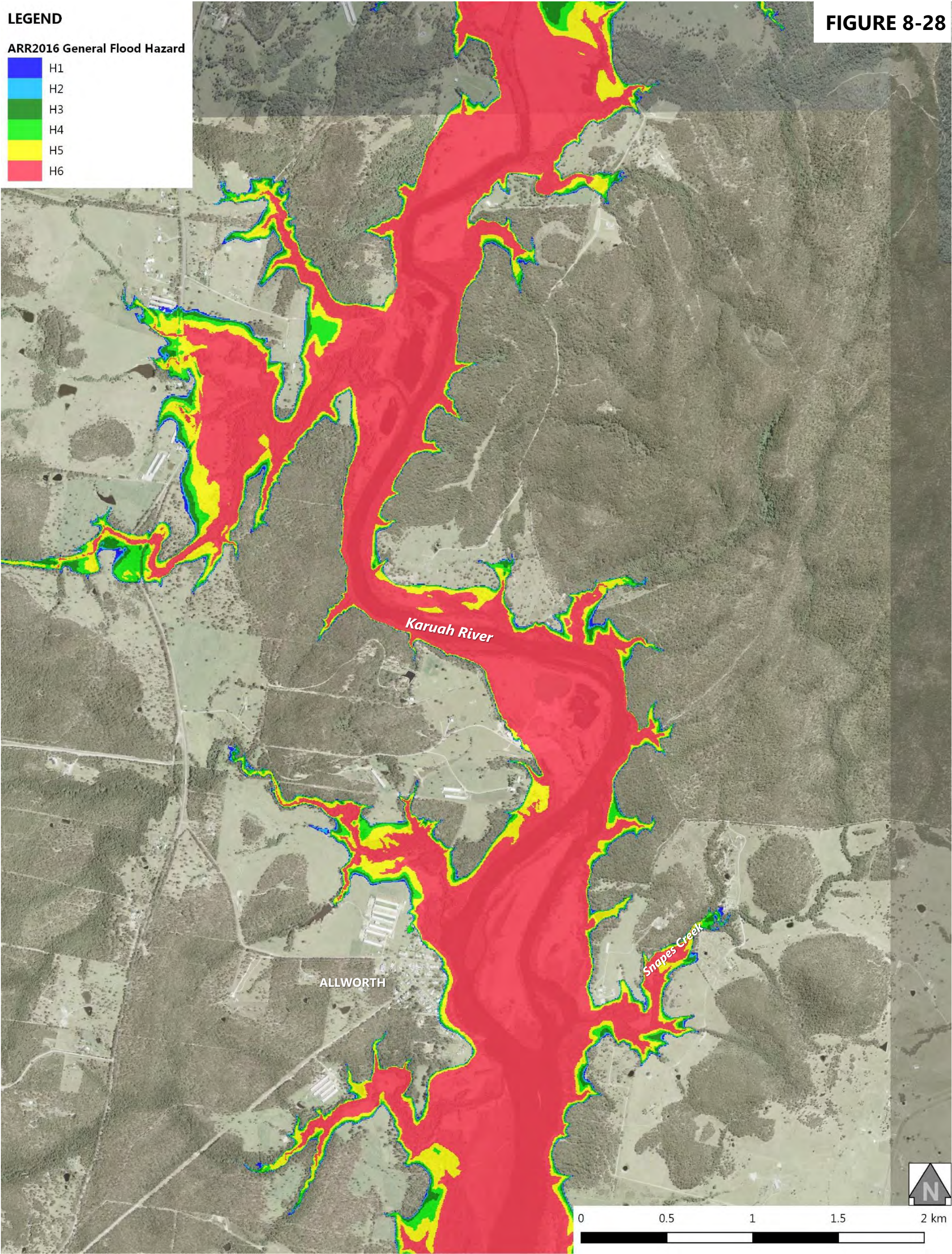


LEGEND

ARR2016 General Flood Hazard

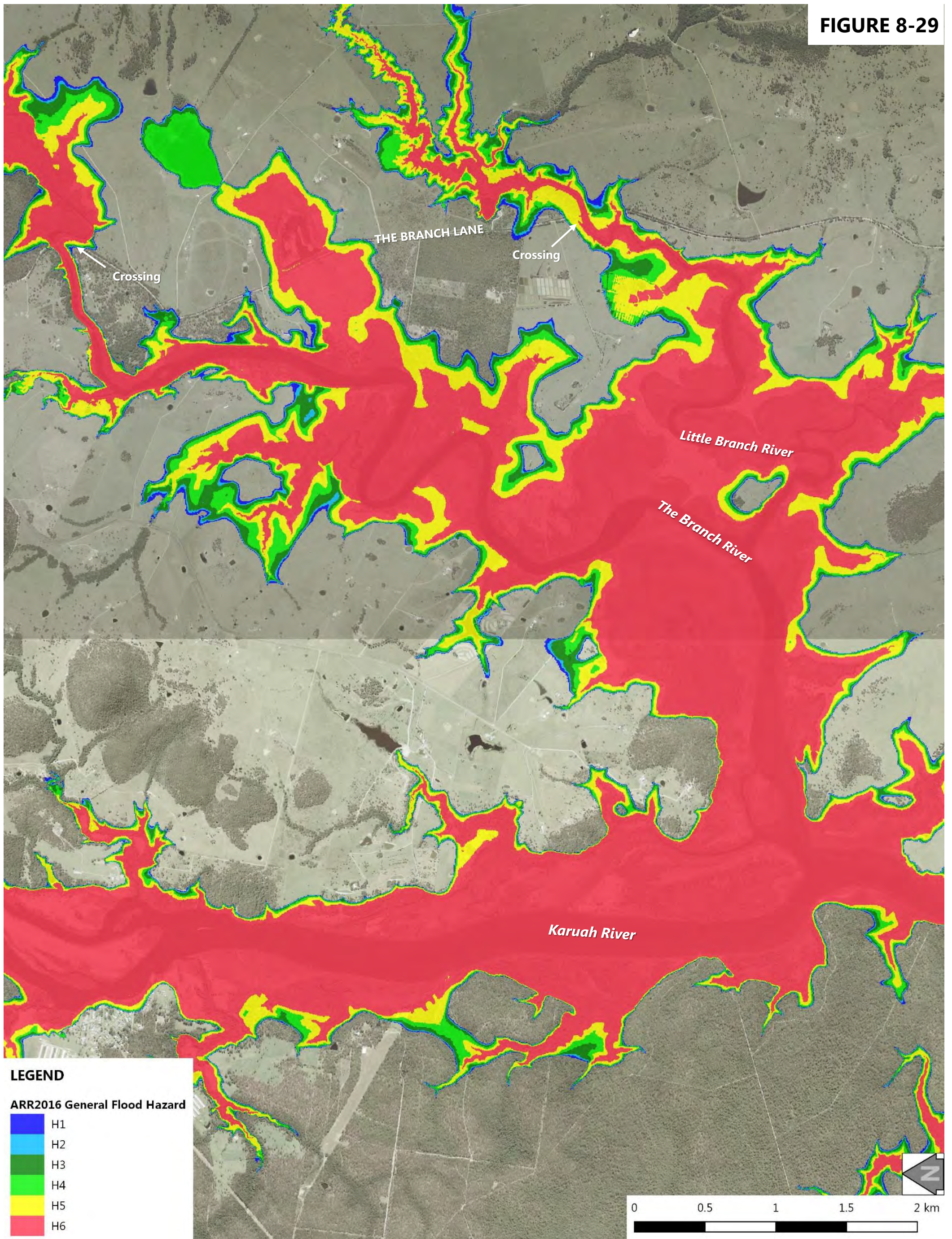
- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 8-28





**FIGURE 8-29**



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**PROBABLE MAXIMUM FLOOD DESIGN FLOOD EVENT  
ARR2016 GENERAL FLOOD HAZARD AT THE BRANCH**



LEGEND

ARR2016 General Flood Hazard

- H1
- H2
- H3
- H4
- H5
- H6

FIGURE 8-30

